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# TRADOC ANNUAL COMMAND HISTORY (U)

1 JANUARY TO 31 DECEMBER 1991

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**U.S. ARMY TRAINING AND DOCTRINE COMMAND  
ANNUAL COMMAND HISTORY  
1 January to 31 December 1991**

(RCS CSHIS-6 (R3))

By  
John L. Romjue  
Anne W. Chapman  
Susan Canedy  
James T. Stensvaag

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Editor

Office of the Command Historian  
U.S. Army Training and Doctrine Command  
Fort Monroe, Virginia

June 1992



GENERAL JOHN W. FOSS  
COMMANDING GENERAL  
UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND  
2 August 1989 - 22 August 1991



GENERAL FREDERICK M. FRANKS, JR.  
COMMANDING GENERAL  
UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND  
23 August 1991 -

## FOREWORD

This volume is the sixteenth installment in a series which covers the major mission activities of the Training and Doctrine Command (TRADOC) on an annual basis. Taken together, these annual command histories furnish a diachronical analysis of the performance of the major Army command with primary responsibility for insuring the Army is ready for war, both today and in the future.

Following the pattern of recent years, the TRADOC Annual Command History for 1991 consists of a narrative volume and several volumes of supporting documents. The narrative describes the command's major activities from the commander's perspective, focusing on mission support (to include TRADOC's support of Desert Shield and Desert Storm), doctrinal development, institutional training and training support, equipment requirements, force design and leader development. The foundation of the narrative rests on the written materials generated by the headquarters in the day to day conduct of its business, and from oral interviews with persons having first hand knowledge of events. Footnotes provide references to source documents which are collected in supplementary volumes that are a part of the TRADOC Historical Research Collection. An important secondary source is the series of semianual staff historical reports, which outline staff agency organizational structure and discuss major events and issues from particular staff agency perspectives; those reports are retained in the TRADOC Historical Research Collection.

As annual histories are written from year to year, it is easy to fall into the trap of characterizing the events of a given year as marking a "watershed" in the organization's existence. Nevertheless, it is justifiable to recognize 1991 a watershed in the life of TRADOC. For the first time since its establishment in 1973, the command executed its full range of mission responsibilities in a wartime environment, including mobilization, deployment, redeployment, and demobilization of troops, along with training, doctrinal work, and combat developments. Concurrently, TRADOC began adjusting to the accelerated disintegration of the Soviet Union and assessed the implications of global change on the Army's force structure for the coming decade, wrestling with the questions of what the future Army would look like and how it would need to be trained. Although the coming year loomed ahead as a time when the command would face inevitable budgetary and manpower reductions--as well as reorganization--there was a certain gratification in the knowledge that events in the desert earlier that year had served to validate TRADOC's efforts to train the Army to meet the challenges of the day.

In keeping with our usual practice, this Annual Command History is the product of the cooperative efforts by the entire staff in the Office of the Command Historian. Supervision of the day to day research and writing was handled superbly by Mr. John L. Romjue, Chief of Historical Studies and Publication, who also wrote the accounts on doctrinal development and force design, as well as the major portion of the introduction. That part of the introduction dealing with organizational changes was done by Dr. Anne Chapman, Research Historian, who also wrote two major chapters: on institutional training and on training support. Treatment of TRADOC's role in support of Desert Shield and Desert Storm was covered in the Mission Support chapter by Dr. Susan Canedy, Archivist, who was also responsible for the equipment requirements section of Chapter III. The remainder of the mission support chapter was done by Dr. James T. Stensvaag, Chief of Historical Programs and Policy. Layout, manuscript production, and a wide range of editorial tasks were skillfully executed by Mr. Joseph H. Mason III, Archives Technician. Overall direction for the history was carried out by the undersigned.

Fort Monroe, 24 June 1992

HENRY O. MALONE, JR., Ph.D  
Chief Historian  
Training and Doctrine Command

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## INTRODUCTION

The period of world change that had begun in the latter months of 1989 and moved at an accelerating pace in 1990 continued through the course of 1991. The collapse of communism in Eastern Europe and the effective breakup of the Warsaw Pact, coupled with movement in the Soviet Union toward democratic and free market institutions, was followed in 1991 by the full collapse of communist power in the Soviet Union and the breakup of that empire into a commonwealth of independent states. In the Persian Gulf, the United Nations force buildup in the late months of 1990 to reverse the invasion on 2 August of Kuwait by Iraq, graduated into a victorious air and ground war led by U.S. forces against Iraq during January-February 1991.

At the same time that major U.S. Army elements were deploying from their continental United States and European bases in Operation Desert Shield to assist in the United Nations' initiative to liberate Kuwait and counter the Iraqi threat in the Middle East, the Army was carrying through a major drawdown of its active and reserve strength. The reduction of the Army, occurring in response to the disappearing Soviet threat was only temporarily stayed by the short Gulf War. The new strategic situation created major redefining challenges for TRADOC in all elements of its dual-sided mission of preparing the Army for war today and designing the Army of tomorrow.

TRADOC's missions encompassed five development functions: formulation of the Army's war fighting and support doctrine; design of its tactical units; definition of operational requirements for Army weapons and equipment; individual training of soldiers; and the development of the Army's leaders at all echelons. The command also had the responsibility of supporting its subordinate organizations. Apart from its headquarters at Fort Monroe, Virginia, TRADOC carried out its assigned missions through 4 major subordinate commands, 7 initial entry training centers, 28 service schools, and the analytic and other activities it directed on its own 17 installations and on 12 installations of other major Army commands.

TRADOC had carried out the major Army missions of combat developments and individual training since established in the 1973 STEADFAST Reorganization of the Army in the United States. Coming into existence in the period of defense policy reorientation from Vietnam to NATO Europe and the challenge of the Warsaw Pact buildup, TRADOC carried through, in the 1970s and 1980s, sustained programs of training reform, weapon, equipment, and force modernization, and doctrine revision. Those efforts had transformed the Army physically and intellectually into a modernized, trained, and ready force. The headquarters' many efforts to those ends have been documented in preceding installments of the command's annual history.

### Operations Desert Shield and Desert Storm

It was with this modernized and transformed American Army that the United States went to war in the U.N. action against Iraq in early 1991. The seizure of the small neighboring oil-rich state of Kuwait by the Iraqi president Saddam Hussein, on 2 August 1990, and the corresponding Iraqi threat to Saudi Arabia and the other oil states of the Persian Gulf had introduced a crisis of worldwide dimen-

sions. The prospect of an Iraqi stranglehold on the oil production of the Persian Gulf, together with intelligence indications of Iraq's nearing attainment of a nuclear weapon potential, raised the security stakes to global proportions. United States and United Nations actions had resulted in deployment of significant air, sea, and land forces to Saudi Arabia by the close of 1990. U.N. Resolution 678, passed on 29 November 1990, demanded Iraq's unconditional withdrawal from Kuwait by 15 January 1991 and authorized U.N. members to use all necessary means to force Iraq out by that date. This U.S.-led effort, titled Operation Desert Shield, had put in place a U.S. force of 300,000 under U.S. Central Command (CENTCOM) by 26 December, including 189,000 U.S. Army troops from continental United States and German bases.<sup>1</sup>

Following expiration of the 15 January deadline without Iraqi withdrawal, and supported by a U.S. congressional vote three days earlier for use of "all necessary means," Operation Desert Storm was launched on 17 January 1991 in a massive air offensive. Air strikes severely weakened the Iraqi force, electronically blinded Iraqi intelligence as to the U.N. ground operational plan, and set the stage for the ground war. The troop buildup continued in the meantime. U.S. forces reached 523,000 on 16 February, with U.S. Army strength in theater reaching 300,000 on 23 February. A significant reserve call-up supported CENTCOM, particularly with support units at corps and theater Army level.

American forces were under U.S. Army General H. Norman Schwarzkopf, the CENTCOM commander-in-chief, who also commanded NATO allied contingents and co-directed operations overall with his Saudi counterpart Lt. Gen. Prince Khalid Bin Sultan, commander of Arab-Islamic theater level forces. Army control was vested in Army Forces Central Command (ARCENT), a reinforced two-corps field army under Lt. Gen. John J. Yeosock. ARCENT included the XVIII Airborne Corps commanded by Lt. Gen. Gary E. Luck, with the U.S. 82d and 101st Airborne Divisions and 24th Infantry Division (Mechanized), the French 6th Light Armored Division, the 3d Armored Cavalry Regiment, and other units assigned; and VII Corps under Lt. Gen. Frederick M. Franks, Jr., with the U.S. 1st Infantry Division (Mechanized), 1st and 3d Armored Divisions, the 1st Cavalry Division, the 2d Armored Cavalry Regiment, the British 1st Armored Division, and other units assigned.

The combined ground offensive, launched on 24 February, featured a deep penetration and massive wheeling action from the U.N. left flank by the XVIII Airborne and VII Corps which isolated and encircled the Iraqi forces. As attacking U.S. Marine Corps and Arab coalition forces liberated Kuwait City. Hostilities ended on 28 February with the full destruction and rout of Iraq's offensive forces and with all U.N. objectives attained at a cost, for the United States, of 148 battle deaths. Subsequent moves by remnant Iraqi forces against a Kurdish revolt in the north required further U.S. assistance in Operation Provide Comfort. U.S. redeployments began in March and proceeded through August, with a residual force retained to assist the monitoring of U.N. resolutions and cease-fire agreement.

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1. For an overview of the events of Desert Shield and the succeeding Desert Storm, see Chapter I, TRADOC Historical Study, Susan Canedy et al., TRADOC Support to Operations Desert Shield and Desert Storm: A Preliminary Study, Fort Monroe, Va.: Office of the Command Historian, 1992.

Although handicapped in its buildup phase by a paucity of fast sealift vessels and by the immense deployment distances, Operation Desert Storm was an event of decisive military and strategic significance. Restoring Kuwaiti sovereignty and destroying Iraq's offensive military capability, the U.N. action foreclosed the possibility of Iraqi hegemony in the critical Persian Gulf region and cut short Iraqi attainment of nuclear blackmail potential. A reaffirmation of the U.N. peacekeeping role, Desert Storm also affirmed the doctrinal course of U.S. military and U.S. Army planning in the 1980s toward combined allied and joint service operations. With its application of principles of war such as objective, deception, surprise, and maneuver, Desert Storm was a classic demonstration of Army AirLand Battle doctrine, carried out by the modernized, well-equipped trained and ready fighting and support organizations of the Army of Excellence designed in the preceding decade.<sup>2</sup>

As the U.S. Army agency charged with preparing the Army for war, TRADOC's major contribution to the desert operations was the trained readiness of the force itself. But the command's direct role of support to the Gulf action was also significant. As the Army's trainer and combat developer and the agency responsible for 17 major Army installations in the continental United States, TRADOC made important contributions. Those support tasks fell into the realms of mobilization and personnel; logistics and the replacement centers; training and combat-doctrinal support; and family, community, and morale support.<sup>3</sup>

### **The End of the Soviet Threat**

The stunning victory of coalition forces in Operation Desert Storm occurred in an international order whose strategic presuppositions had fundamentally altered. As a concerted U.N. action requiring the unanimous consent of the permanent members of the Security Council, the ejection of Iraq from Kuwait and the neutralization of the Iraqi army depended on the newly-born cooperation of the Soviet Union and China, communist powers that had traditionally opposed and subverted U.S. and free-world security policies. With the People's Republic of China, U.S. policy had in recent years secured a more cooperative diplomatic relationship. But it was the historic and fundamental political change in the Union of Soviet Socialist Republics that permitted the emergence after 1989 of a new international order.

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2. For a strategic and operational analysis of the Gulf War, see Col. Harry Summers, On Strategy II: A Critical Analysis of the Gulf War, New York, Dell, 1992. Colonel Summers' study also deals with the psychological recovery and doctrinal renaissance of the military services following Vietnam, through their respective development of new strategic and operational doctrine. For an analysis of the CENTCOM commander and Operations Desert Shield and Desert Storm, see Roger Cohen and Claudio Gatti, In the Eye of the Storm: The Life of General H. Norman Schwarzkopf, New York, Farrar, Straus and Giroux, 1991.

3. For a discussion of mobilization, personnel, logistics, replacement center support, as well as family, community, and morale support activities, see below, Chapter I. Training and combat-doctrinal development support is discussed topically in Chapters II through V.

## **The End of a Divided Europe**

Previous annual histories have sketched the watershed events of 1989-1990 in Eastern Europe by which the Iron Curtain collapsed, the Soviet satellite nations attained independence and overthrew their communist regimes, a treaty was signed reducing Warsaw Pact and NATO conventional forces, the divided German states achieved reunification, and the Soviet-dominated Warsaw Pact itself ceased to function. Those historic changes spelled the end of the long division of Europe, the power situation that had prevailed since the Soviet Union had established a satellite empire in most of Eastern Europe in the wake of the Second World War. The changes were at the same time affecting the Soviet Union itself. Under the leadership of Soviet President Mikhail Gorbachev, democratic and free-market reform measures were, in 1990, abrading the central power position of the Communist Party in Soviet political and economic institutions.<sup>4</sup>

Together, the end of a divided Europe, and the movement in the Soviet Union away from its historic ideology-inspired revolutionary and power policies abroad, brought an end to the forty-five-year duration of the Cold War and the Soviet threat, and transformed the world political-strategic picture. Though Soviet strategic power remained intact and the major historical process in motion had yet to run its course, implications for U.S. and NATO security were apparent. For the U.S. Army, the diminished Soviet threat to Western Europe meant fewer forces needed, an end to the solid strategic line-up of NATO corps along the satellite frontiers, and doctrinal change to accommodate the new nonlinear defense situation. We will examine those implications for the U.S. Army after first taking note of the continuing collapse which, in 1991, resulted in the disintegration of the USSR itself.

## **The Disintegration of the Soviet Union**

While powerful historical change was shaking the Soviet Union in 1990, it remained unclear at the close of that year whether the balance of political forces had tipped conclusively in favor of democratic institutions and a fundamental renunciation of Soviet world power aims. Soviet forces remained forward deployed and intact in 1990. In the late months of the year, a resurgence of influence among hard-line party, military, and KGB elements was apparent. At the same time, President Gorbachev,<sup>5</sup> pressing his reforms, continued the aggregation of personal power in his own hands.

The currents of the previous year continued in 1991. In March, leaders of mass demonstrations in Moscow and other Soviet cities called for an end to communist rule. The continuing devolution of power from the institutions of the Soviet Union to the Russian Republic and the other constituent Soviet states was emphasized by the election of Boris Yeltsin to the Russian presidency on 12 June.

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4. TRADOC ACHs, CY 89, pp. 2-9; CY 90, pp. 2-6. (Both FOR OFFICIAL USE ONLY -- Info used is not protected)

5. TRADOC ACH, CY 90, pp. 4-5, 6. (FOR OFFICIAL USE ONLY -- Info used is not protected)

On 31 July, Soviet President Gorbachev and President George Bush signed the START (Strategic Arms Reduction) Treaty in Moscow, limiting strategic nuclear warheads.<sup>6</sup>

Those events and others triggered on 19 August, a coup against Gorbachev by hard-line elements of the Soviet Ministry of the Interior, the army, and the KGB. That act, however, lacked popular support and commanded insufficient strength in the army and party organs to prevent a popular counterstroke carried out in the ensuing days and led by Yeltsin. Restoring Gorbachev to his presidential post on 21 August, Yeltsin forced the subsequent firing of Gorbachev's cabinet and declared the Communist Party excluded in the Russian Republic. With the tumbling of Lenin statues, these days saw the collapse of the Communist Party in Russia and in most states of the Soviet Union. On 24 August, the party was declared barred from state institutions, party property was nationalized, and Gorbachev resigned his party post of general secretary. On 29 August, the Soviet National Assembly deconstituted the Communist Party and closed its offices throughout the USSR.<sup>7</sup>

In the meantime, the breakup of the Soviet Union state structure began, with the Ukraine and Beylorussia and most other states declaring independence by early September. On 5 September, the Soviet Congress of Peoples Deputies dissolved itself. On 8 December, Russia, Beylorussia, and the Ukraine signed a treaty establishing a new "Commonwealth of Independent States" and informed President Gorbachev that the Soviet Union no longer existed. On 21 December, in Alma Ata, Kazakhstan, the presidents of all the former republics except Georgia and the three seceding Baltic states, declared formation of the Commonwealth, replacing the Soviet Union. On 25 December, in the final act of the disintegration of the once totalitarian state that had funded and armed world revolution since the end of World War I, the Soviet Union was formally disbanded, Gorbachev resigned the Soviet presidency, and the hammer-and-sickle banner was lowered over the Kremlin, replaced by the white, red, and blue flag of prerevolutionary Russia.<sup>8</sup>

The death of communism and the disintegration of the Soviet Union in 1991 was accompanied by other finalizing events affecting Eastern Europe. On 25 February, the Warsaw Pact nations signed documents facilitating the dissolution of the military arm of the alliance. On 31 March, the military structure was disbanded, and on 1 July the Warsaw Pact was formally disbanded. Two days earlier, on 28 June, COMECON, the parallel economic union, was dissolved. Mass demonstrations against the communist authority in the non-satellite state of Yugoslavia occurred in March, precipitating the end of party rule and the disintegration of that state into independent entities. On 13 October, Bulgarian voters drove from power the socialist (formerly communist) party. Popular elections in Poland, on 27 October, returned a noncommunist majority. Farther afield, the last troops of the former Soviet surrogate, Cuba, departed Angola in May.<sup>9</sup>

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6. Dates as recorded in Facts on File, Vol. 51, 1991, pp. 176, 429, 565.

7. Dates, ibid., pp. 621, 639, 637.

8. Dates, ibid., pp. 639, 640, 653, 929, 969.

9. Dates, ibid., pp. 160, 246, 519, 173, 785, 824, Index 1026.

The stupendous political events of 1989-1991 culminating in the collapse of communism and in the breakup of the world's most powerful revolutionary state signified a turning point in 20th century history. But with the sharp diminution of mortal threat to U.S. national security came another danger, the prospect of a reduction of U.S. military force to levels insufficient to meet the challenges of the still uncertain and dangerous world.

### **The Changing Army**

The end of the Cold War precipitated powerful congressional pressure to reduce the Army, a current only temporarily slowed by the rapidly concluded war in the Persian Gulf. Army planning in 1990 called for the phased reduction of the active force to a level under 600,000 by the mid-1990s. The reduction, added to the new strategic picture, suggested many changes ahead in the suppositions governing Army doctrine and the design and equipping of the fighting force.

### **The Strategic Reorientation**

As the effects of geopolitical change were felt during the course of 1990, the Army's forward-deployed and forward-defense focus in Europe shifted to a new strategic orientation. That new stance emphasized the projection of U.S. land combat power and reinforcement of those forces from the continental United States. Secondary was the maintenance of a forward presence in smaller contingents of forward-deployed forces. The focus of the new strategy was no longer an overriding Soviet threat, but the range of less-serious regional threats, the unpredictability and likelihood of which the recent events in both Panama and the Persian Gulf had so amply demonstrated.

As described in October 1991 by the Army Deputy Chief of Staff for Operations and Plans, Lt. Gen. J. H. Binford Peay III, the Army structure foreseen for 1995 would be a four-corps force. With elimination of VII Corps and two divisions from U.S. Army Europe, the four regionally focused corps would command 12 active and 6 reserve component divisions, along with 2 cadre divisions. Army divisions abroad would be limited to 2 Active Army heavy divisions in Europe and 2 Active Army divisions in the Pacific -- 1 heavy and 1 light. From its 781,000 peak in the late 1980s, Active Army strength would be reduced to 535,000 in 1995, with equivalent reserve component reductions. In 1991, planning was in full progress for the reduction of U.S. Army Europe to a single two-division "Capable Corps" force.<sup>10</sup>

The floor of the planned drawdown to 535,000 Active Army personnel by 1995 was by no means certain at the close of 1991, as voices in the Congress argued for still deeper cuts. In the face of the uncertain future of the

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10. (1) TRADOC ACH, CY 90, pp. 7-8 (FOR OFFICIAL USE ONLY -- Info used is not protected). (2) See Lt Gen J. H. Binford Peay III and Col Jack A. LeCuyer, "Gearing the Force for Crisis Response," *Army*, Oct 1991, pp. 152-56, 158, for a discussion of the new strategy and department planning for the mid-1990s force. (3) Gen Crosbie E. Saint, "War Adds New Dimension to Europe's Role," *Army*, Oct 1991, pp. 88-91, 93, 95, 97.



force, the Army Chief of Staff, General Carl E. Vuono and his successor, General Gordon R. Sullivan enunciated the need to maintain the Army's fighting and technological edge, to reshape the Army skillfully to the new strategic situation, to secure and provide the necessary resources to maintain the new smaller structure, and to strengthen the Total Force -- Active Army, Army Reserve, Army National Guard, and the civilian work force. General Sullivan emphasized the Army's historical record of deterioration following its wars. Those radical declines in strength and readiness had led to debacles such as the Kasserine Pass in 1943, Task Force Smith in 1950, and Desert One in 1980. "No more Task Force Smiths," was a watchword in the Army in 1991, as planners dealt with the new problem of force retrenchment following on the strategic reorientation of the Army.<sup>11</sup>

### **The Task of TRADOC**

It was clear that TRADOC's task in fulfillment of its mission responsibilities to the Army was to assist in the definition of a smaller Army reoriented toward force projection to meet contingencies bearing on U.S. interests throughout the globe. The basis for change was the Army's evolving doctrine. General John W. Foss, who had taken command of TRADOC in August 1989 on the eve of the revolutionary changes in Eastern Europe, had seen his task to be the design and training of the smaller Army needed in a transformed world. General Foss directed and pushed to completion in August 1991 a conceptual basis for the Army which applied and extended the Army's AirLand Battle doctrine to the new conditions and to the strategic sphere, designated "AirLand Operations." Beyond the emerging doctrine, all aspects of the Army would require redefinition and adaptation. Weapons and equipment programs were sharply affected by the shrinking budget climate ahead, as force designers and materiel developers faced the need to maintain the technological edge. Training in all its diversity would have to adjust to the smaller establishment. Tactical organization design would follow decisions not yet final at the close of 1991 as to the future dimensions of the force and its doctrine.

### **Change of Command**

On 23 August 1991, General Foss passed command of TRADOC to his successor, preliminary to retiring from the Army in subsequent ceremonies at Fort Bragg. Following General Foss as TRADOC's eighth commander was General Frederick W. Franks, Jr., who had been commander of VII Corps in Germany and in the Persian Gulf during Operation Desert Storm. Presiding over the Fort Monroe ceremony, General Sullivan commended Foss for his contributions in AirLand Operations and contingency force planning.<sup>12</sup>

The combat commander of the heavy corps force in the desert war -- a corps that, in the ironies of retrenchment decisions, had returned to Germany for drawdown and inactivation planning -- General Franks brought to TRADOC an immediacy of experience with the essentials of the command task that lay ahead. General

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11. General Gordon R. Sullivan, "Maintaining Momentum While Accommodating Change," Army, Oct 1991, pp. 24-27, 30, 32, Doc Intro/1.

12. MFR ATMH, OCH, 23 Aug 91, subj: Change of Command.

Franks saw doctrine as the basis of change and the centerpiece for TRADOC actions. He set doctrinal planners at Fort Monroe and Fort Leavenworth immediately to work on the revision of FM 100-5, an action which, begun the previous year, had been displaced in late 1990 by the advent of Operations Desert Shield and Desert Storm and by a command focus through mid-1991 on the AirLand Operations concept. FM 100-5 was, Franks stated, an engine of change, both a process and a product.<sup>13</sup>

General Franks emphasized the Army watchword: that the Army must maintain the edge, and that there be no more Task Force Smiths. For Franks, the Army had to "break the normal downturn," keep the edge in doctrine, organization, training, materiel, and leader development, and also in the "soldier system." General Franks emphasized superior advantage in combat capability so as to attain decisive victory with minimal casualties, and the need to protect the force, especially its exposed vulnerabilities. The new TRADOC commander stressed a third need on top of the twin missions of preparing the Army for war and designing its future architecture. TRADOC needed also to maintain organizational excellence as an institution and to maintain a winning team poised intellectually to take on the challenges of the future.<sup>14</sup>

### **TRADOC Organization in 1991**

In 1990, as a result of pressures on the U.S. military structure resulting from the dissolution of the Warsaw Pact and a consequent reduction in the budget for defense, along with a domestic economy under stress, the Training and Doctrine Command had undergone a major reorganization. Planners had taken into account the inevitability of a need for a smaller scale military force as well as the need to maintain combat readiness. This section discusses how TRADOC was organized as the command responded to the need to reduce the number of personnel as mandated by the Department of the Army. The background of the reorganization and the reorganization programs are discussed in the TRADOC Annual Command History for 1990.

During 1991, TRADOC continued to function as a major command of the United States Army, dedicated to preparing the Army for war and to serving as the architect of the Army's future. The organization chart at Appendix A shows the structure of the command headquarters as of September 1991. As part of the TRADOC reorganization in 1990, the Combined Arms Center at Fort Leavenworth, Kan. had been redesignated the Combined Arms Command (CAC), and the Logistics Center at Fort Lee, Va. became the Combined Arms Support Command (CASCOM). Both were designated major subordinate commands. The CAC commander wore a "dual-hat" as Deputy Commanding General for Combined Arms. The CASCOM commander continued to serve also as the Deputy Commanding General for Logistics. Also dual-

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13. (1) MFR ATMH, OCH, John L. Romjue, 9 Oct 91, subj: Gen Franks' Remarks to TRADOC Staff, 7 Oct 91, Doc Intro/2. (2) See below, pp. 65-67, for a discussion of FM 100-5 planning in 1991. (3) See TRADOC ACH, CY 90, pp. 45-50, for an account of the start-up of FM 100-5 under General Foss during 1990.

14. MFR ATMH, 9 Oct 91. (2) General Frederick M. Franks, Jr., "After the OPFOR, the Medina Ain't Nothin'!", Army, Oct 1991, pp. 72-75, 77, Doc Intro/3.

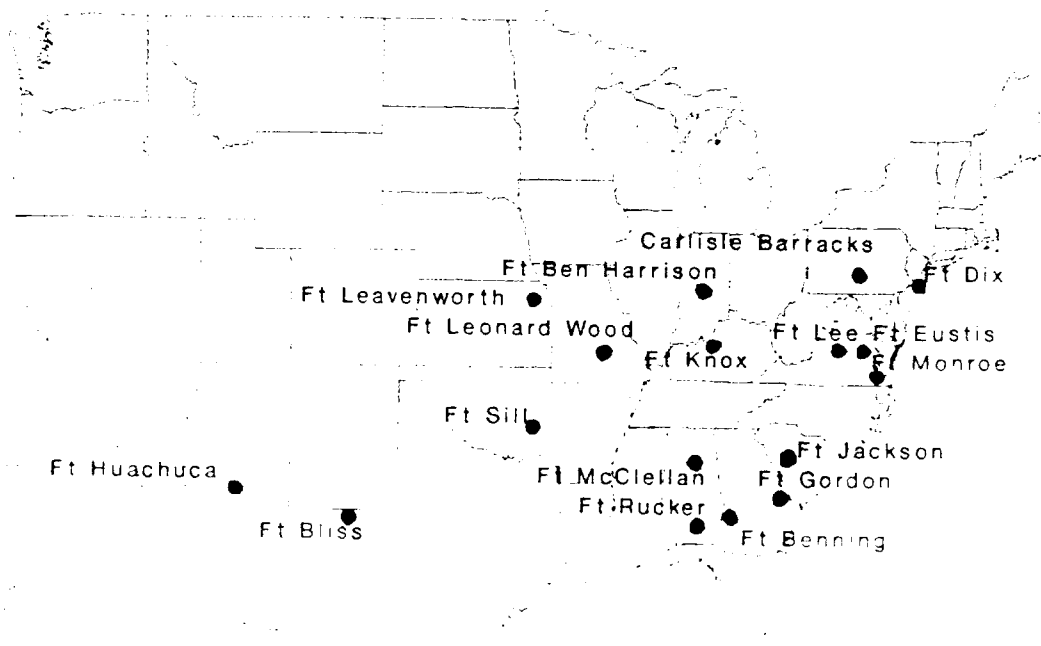
hatted was the Deputy Commanding General and Chief of Staff TRADOC. Two other deputy commanding generals, one for the U.S. Army Reserve and one for the Army National Guard, continued in their reserve capacities. The Reserve Officers' Training Corps Cadet Command headquartered at Fort Monroe and the TRADOC Analysis Command at Fort Leavenworth, with elements at Forts Monroe, Lee, Benjamin Harrison and White Sands Missile Range, functioned as major subordinate commands.

Within the headquarters, as shown in Appendix A, the TRADOC Chief of Staff was assisted by six members of the General Staff.<sup>15</sup> They included the Deputy Chiefs of Staff for Base Operations Support (DCSBOS); Concepts, Doctrine, and Development (DCSCDD); Resource Management (DCSRM); Information Management (DCSIM); Training (DCST); and Analysis (DCSA). Constituting the Special Staff were the Chief of Public Affairs; the Staff Judge Advocate; the Inspector General; the Office of Internal Review and Audit Compliance; the Command Historian and the Command Safety Office. Also designated Special Staff were foreign army liaison officers to TRADOC, and the Army Reserve and Army National Guard advisors.

TRADOC also operated several field operating agencies, organizations with special missions which reported directly to the headquarters from a variety of locations. The Army Training Support Center at Fort Eustis, Va. and the Security Assistance Training Field Activity in Hampton, Va. reported to the command through the Deputy Chief of Staff for Training. Other field operating agencies included the TRADOC Management Engineering Activity (TRAMEA) centered at Fort Monroe with satellite offices around the command; the TRADOC Library and Information Network, also at Fort Monroe; the Peninsula Civilian Personnel Support Activity which served Forts Monroe, Eustis, and Story from a location in Newport News, Va.; the TRADOC Contracting Activity, Fort Eustis; the TRADOC Command Field Element, which coordinated the network of TRADOC liaison officers to sister services and foreign armies from Fort Monroe. Organizations with special missions included the U.S. Disciplinary Barracks at Fort Leavenworth and the Joint Readiness Training Center at Fort Chaffee. TRADOC provided direction for twenty major organizations on seventeen TRADOC installations; eleven organizations on installations run by other major commands; and six sub-installations. The map below shows the location of TRADOC installations in the United States at the close of 1991. A list of subordinate commands and principal commanders as of April 1990 appears at Appendix B.

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15 This was a change from the period prior to August 1990, when there were nine members of the General Staff. The headquarters was reorganized effective 6 August 1990.



Source. TRADOC Pam 350-8. TRADOC Primer. 1 Feb 88. as adapted to reflect the acquisition of Fort Huachuca

### **Reorganization and Realignment Issues**

A smaller force meant the Army needed fewer installations. During 1991, activity was ongoing at the Department of Defense, the Department of the Army, and at the Training and Doctrine Command to identify obsolete or underutilized installations for possible closure or realignment. Actions were also taken to implement the directives of earlier studies.

In May 1988, the Secretary of Defense had chartered a Commission on Base Realignment and Closure (BRAC) to recommend realignment or closure of Department of Defense installations. In late December 1988, the commission submitted its report, which the Secretary of Defense approved. The 1988 report would subsequently become known as BRAC I. With regard to TRADOC, the commission recommended, among other things, that Fort Dix be realigned to semiactive status; that the Intelligence schools at Forts Huachuca and Devens be consolidated at Fort Huachuca, that the U.S. Army Recruiting Command and Fourth U.S. Army Headquarters be moved from Fort Sheridan to Fort Benjamin Harrison, and that advanced individual training be

consolidated. In January 1989, to put the commission's decisions into effect, the TRADOC commander established the Base Realignment Office, a provisional organization that reported directly to the TRADOC Chief of Staff.<sup>16</sup>

In 1991, several BRAC I initiatives were still being implemented. Plans for a drawdown of Fort Dix to semiactive status, concentrating on reserve component activities, meant the transfer of the base from TRADOC to U.S. Army Forces Command (FORSCOM) which commanded the U.S. Army Reserve. That transfer was scheduled for 1 October 1992. Related changes would take place over four fiscal years beginning in the fourth quarter of FY 1990. The functions of the Fort Dix Army Training Center also had to be transferred. Basic combat training (BCT) at Fort Dix would be divided between Forts Leonard Wood, Jackson, and Knox in fiscal years 1992 and 1993. Other mission shifts focused on the consolidation of like activities around the command.<sup>17</sup>

Two issues with relation to the realignment of Fort Dix received much attention from the TRADOC BRAC Office during 1991: air base ground defense (ABGD) training and the future role of the New York Area Command (NYAC). The earliest planning was based on the transfer of the ABGD training to Fort Knox in 1992. During 1991, most planning centered on moving the training to Fort Benning or Fort McClellan. At the end of the year, no decision had been made, but Headquarters Department of the Army appeared to favor leaving air base ground defense training at Fort Dix for the time being. In addressing the future role of the New York Area Command, the TRADOC BRAC Office, in a letter to the Department of the Army requested the NYAC, along with the 26th Army Band be transferred to FORSCOM, effective 1 October 1992. To determine if that solution was the proper course, a "NYAC missions review" involving both TRADOC and FORSCOM was undertaken to establish the "essentiality of their (NYAC) functions . . . as measured against critical Army needs elsewhere." At the end of the year, the intention continued to be to consider the NYAC as part of the transfer of Fort Dix to FORSCOM.<sup>18</sup>

On 1 October 1990, command and control of Fort Huachuca had passed from the U.S. Army Information Systems Command to TRADOC. The transfer was part of the overall move to consolidate intelligence schooling at Fort Huachuca rather than at Fort Devens, as had earlier been recommended by the 1988 Department of Defense Base Closure Report. Fort Huachuca was scheduled to assume military intelligence enlisted training from Fort Devens by the end of fiscal year 1994. In 1991, however,

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16 For a more detailed discussion of the 1988-89 activities at the Department of Defense and at TRADOC, see TRADOC ACH, CY 89, pp. 23-26 (FOR OFFICIAL USE ONLY - Info used is not protected)

17 For a detailed discussion of the issues involved in the drawdown of Fort Dix, see TRADOC ACH, CY 90, p. 18 (FOR OFFICIAL USE ONLY - Info used is not protected)

18 (1) SSHR, Operations Dir. OCoS, CY 91/I, p. 3. (2) Briefing Slides, NYAC Review IPR, 31 Oct 91 (quotation is from the TRADOC CoS). (3) Msg. Cdr TRADOC to Cdr FORSCOM and Cdr Fort Dix, 051815Z Nov 91, subj: Joint TRADOC/FORSCOM NYAC Review

TRADOC planners could look only to the transfer of command as evidence that the consolidation would take place as planned. That BRAC initiative, as well as those at Fort Dix, was caught in a freeze on military construction that remained in effect at the end of the year.<sup>19</sup>

Other BRAC I actions also affected TRADOC's operations in 1991. Plans were for closing four non-TRADOC installations by 1995. Fort Sheridan was to be closed, and original plans had been to move the Recruiting Command located there to Fort Benjamin Harrison. Subsequent events overruled those plans as noted below. Fort Sheridan's ROTC brigade headquarters would be moved to Great Lakes Naval Station nearby. Closing of the Presidio of San Francisco would force the transfer of an ROTC brigade headquarters to another location. The U.S. Army Aeronautical Services Office-a Fort Rucker unit located at Cameron Station in Arlington, VA-was projected to relocate to Fort Belvoir, and three courses for firefighters, held at Chanute Air Force Base, Mont. would be split between two Air Force bases in Texas.<sup>20</sup>

In late January 1990, the Secretary of Defense's commission had put forth additional initiatives which became known as BRAC II. Those new directives included the proposed closure of Fort McClellan, Ala., a TRADOC post, and Fort Ord, Calif., a FORSCOM post. Both the Chemical School and the Military Police School and a training center were located at Fort McClellan. Fort Ord provided most of the base operations support for the Defense Language Institute Foreign Language Center, a TRADOC function located at the Presidio of Monterey. In October 1990, aware of the potential political and economic impact of such closings, Congress passed the Defense Closures and Realignment Act of 1990 establishing another Base Closure and Realignment Commission. The new law (Public Law 101-510, Title XXIX), required that all plans for base realignment or closure be incorporated into a six year plan for installation and facilities management. The statute required the Secretary of Defense to submit a list of proposed military base closures and realignments to Congress by 15 April 1991. The effort to establish a new plan was the result of congressional criticism that the list unfairly targeted districts represented by Democrats. Others charged that Congress was institutionally incapable of making decisions that were good for the country but painful for some congressional districts. A new overall base realignment and closure plan was to be issued in the spring. As a result, the BRAC II initiatives were in late 1990 cancelled or put on hold awaiting completion of an "umbrella" plan. BRAC II was then dubbed BRAC 91.<sup>21</sup>

There were some significant similarities and differences in the development of BRAC 1991 as compared to the 1988 base closure efforts. Both efforts had been set in motion to overcome the political paralysis that had prevented the closure of bases during the previous decade. The recommendations of the 1988 commission had

19 TRADOC ACH CY 90, p. 19 (FOR OFFICIAL USE ONLY. Info used is not protected.)

20 Ibid.

21 (1) TRADOC ACH CY 90, pp. 19-20 (FOR OFFICIAL USE ONLY. Info used is not protected.) (2) Defense Base Closure and Realignment Commission report to the President, 1 Jul 91, p. V, Doc. Intro. 4.

been influenced by the need to "downsize" a base infrastructure born during more prosperous times in light of a reduced threat and force structure. The commission appointed in 1991 and established as a result of Public Law 101-510, Title XXIX, was influenced by further reductions in Department of Defense budgets and dramatic changes in Eastern Europe. However, the two commissions were structured differently. The 1988 commission had been chartered by and reported to the Secretary of Defense. The members of the 1991 commission, on the other hand, were appointed by the President and confirmed by the Senate. In 1988, members of Congress affected by commission recommendations had complained that the process was secretive, that members of the commission had not visited many of the affected facilities, and that faulty data had been used to reach final closure recommendations. The 1991 commission's proceedings were open, commissioners visited all affected bases, and the General Accounting Office was, from the beginning, an integral part of the process.<sup>22</sup>

In support of base realignment and closure activities, Headquarters Department of the Army directed that the TRADOC BRAC office provide an assessment of the relative military utility of its installations to a Department of the Army Total Army Basing Study (TABS) group. After a comprehensive analysis of the Army's training installations and professional schools, and approval by the command group, the TRADOC BRAC office forwarded TRADOC's report to Department of the Army headquarters on 15 January 1991. The report was used by the TABS group to nominate installations for closure to the Department of Defense, which then provided recommendations to the 1991 BRAC Commission. For the next month and a half, TRADOC BRAC planners worked with TRADOC installations to refine and verify the data submitted to the Department of the Army. On 1 March 1991, TRADOC submitted an updated report to those responsible for TABS. By the end of the month, Headquarters Department of the Army had submitted its list of proposed installation realignments and closures to the Secretary of Defense, who then provided his BRAC 91 recommendations to the 1991 Base Realignment and Closure Commission. TRADOC then moved into the next phase of the BRAC 91 process and began implementation planning for the installations affected by the recommendations. TRADOC installations recommended for closure were Forts Benjamin Harrison, McClellan, and Dix, as well as Fort Chaffee, a subinstallation of Fort Sill. Marked for organizational realignments were Forts Jackson, Leonard Wood, Knox, and Huachuca. On 1 July 1991, the Defense Base Realignment and Closure Commission submitted its recommendations to President George Bush, who approved them on 10 July.<sup>23</sup>

As just noted a number of Army installations were affected by the recommendations of the 1991 BRAC commission. The U.S. Army Recruiting Command would move from Fort Sheridan to Fort Knox instead of to Fort Benjamin Harrison. The Information Systems Command headquarters would remain at Fort Huachuca. Fort Benjamin Harrison would close and the Soldier Support Center, including the Adjutant

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22. Defense Base Closure and Realignment Commission Report to the President, 1 Jul 91, p. 1-3, Doc Intro/4.

23. Memos ATCS-R, TRADOC to HQDA TABS, 15 Jan 91, 1 Mar 91, Subj: Analysis of Training Installations and Professional Schools; Analysis of Training Installations and Professional Schools Update.

General's and Finance Schools, would move to Fort Jackson during the first through third quarters of FY 1995. Forts Dix, Chaffee, and Devens would close to Active Army troops but maintain their functions for the reserve components. Fort Dix would still transfer to Forces Command. The Joint Readiness Training Center, currently located at Fort Chaffee would move to Fort Polk. At that point, the 5th Infantry Division (Mechanized) would move from Fort Polk to Fort Hood. To serve as an opposing force (OPFOR) at the JRTC, the 199th Separate Motorized Brigade would move from Fort Lewis to Fort Polk. Fort Devens' Intelligence School would still move to Fort Huachuca, thereby consolidating intelligence functions. Fort Ord would be closed and the 7th Infantry Division (Light) would move to Fort Lewis. To provide support for the Defense Language School at the Presidio of Monterey, Fort Ord would be renamed the Presidio of Monterey Annex and transferred to TRADOC. The installation most threatened by BRAC II initiatives, Fort McClellan, was not among the installations whose closure the commission agreed to. That fact the commission attributed to the difficulties in reestablishing the Chemical Decontamination Training Facility, because of environmental issues and costs. At the end of the year, the TRADOC BRAC office, in concert with TRADOC installations, had completed the implementation plans for the BRAC 91 directives and had forwarded them to HQDA for approval.<sup>24</sup>

#### Other Organizational Issues

##### TRADOC Analysis Command

A major issue for the Fort Leavenworth-based TRADOC Analysis Command (TRAC) in 1991 was the question of where--Fort Leavenworth or Fort Monroe--the TRAC commander and Deputy Chief of Staff for Analysis should be located. Also of concern was whether TRAC should remain a major subcommand. The TRADOC Analysis Command had been organized in 1986. At that time, General Carl E. Vuono, then TRADOC commander, had decided to bring the Studies and Analysis Directorate (S&AD) of the headquarters Office of the Deputy Chief of Staff for Combat Developments under the new TRAC organization. Two options had been considered for using the S&AD: as staff for a headquarters Deputy Chief of Staff for Analysis, or as an element of TRAC headquarters, located at Fort Monroe. Vuono chose the latter option. He also chose to locate the TRAC commander at Fort Leavenworth where he would be closer to major TRAC activities, and thereby have an opportunity to get the new command off to a good start. Vuono left open the possibility of assigning a future TRAC commander to Fort Monroe.<sup>25</sup>

The issue of dual-hatting had surfaced in 1990 during planning for the TRADOC-Future reorganization and downsizing. In April 1990, the TRAC commander recommended to General John W. Foss, then TRADOC commander, that a Deputy

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24. (1) Commission Report, 1991, pp. 5-2 through 5-17. (2) SSHR, Operations Dir, CY 91, pp. 4-7. (3) SSHR, ODCSIM, CY 91, p. 6. (4) Briefing Slides, Operations Dir. Base Realignment and Closure: HQDA BRAC IPR, 29 Jul 91, Doc Intro/5.

25. (1) Staff Study of Physical Location of TRAC Commander, ODCSA, 17 Jul 91, Doc Intro/6. (2) TRADOC ACH, CY 90, p. 14. (FOR OFFICIAL USE ONLY -- Info used is not protected)



Chief of Staff for Analysis be created at Fort Monroe and that the TRAC commander remain at Fort Leavenworth. Foss approved. The Office of the Deputy Chief of Staff for Analysis was activated on 6 August 1990 using the resources of the TRAC element at Fort Monroe. The TRAC commander was then "dual-hatted" as the Deputy Chief of Staff for Analysis.<sup>26</sup>

On 6 June 1991, during a briefing by the TRAC commander to the TRADOC commander, the question of the location of the TRAC commander was raised. General Foss directed that a study be made to determine the preferred location. The study group considered two options with regard to Fort Monroe: the relocation of the commander and the complete headquarters to Fort Monroe, or the positioning of the commander at Fort Monroe with a minimum staff. The study group offered General Foss its assessment of the situation without making a solid recommendation. In the last analysis, costs and the impact on a large number of employees at Fort Leavenworth governed the decision. On 19 August 1991, General Foss wrote to the CAC and CASCOM commanders to inform them that "the TRAC Commander/DSCA will continue to execute his responsibilities from Fort Leavenworth." At the same time, he assured them that TRAC would remain a major subordinate command. That assurance was prompted by a Headquarters Department of the Army proposal that a "new" analysis center be created from the TRADOC Analysis Command, a position that TRADOC strongly opposed.<sup>27</sup>

Other proposals also threatened to affect internal TRAC organization and the ways in which the command conducted business throughout TRADOC. In early April, 1991, the TRADOC Chief of Staff directed the Office of the Deputy Chief of Staff for Analysis to examine options for centralizing all TRADOC analysis under the TRADOC Analysis Command in response to a suggestion by the Deputy Chief of Staff for Resource Management. At that time, TRADOC was facing large cuts in the FY 1992 and 1993 budgets and seeking to reduce operating costs. The Office of the Deputy Chief of Staff for Analysis accordingly analyzed several options for reducing the total number of analysts at the schools and at CAC and CASCOM by approximately 25 percent, and placing the remaining analysts under a more efficient organization structure. It was assumed that the TRADOC Analysis Command (TRAC) itself would be reduced to an end strength of approximately 500. The preferred option was to place all TRADOC analysts not already under TRAC, under that command, but position them geographically to provide a direct support capability to the schools, CAC, and CASCOM. Thus, analysis "cells" under TRAC would be created at the appropriate schools using existing school analysts. CAC analysts would be consolidated under TRAC at Fort Leavenworth and CASCOM analysts under TRAC at Fort Lee, beginning in FY 1992. Over time, the cells at the schools would be further consolidated into

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26 Staff Study of Physical Location of TRAC Commander, 19 Jul 91, Doc Intro/6.

27. (1) Staff Study of Physical Location of TRAC Commander, 19 Jul 91. (2) Ltr, General John W. Foss to Cdr CAC and Cdr CASCOM, 19 Aug 91, subj: TRADOC Analysis Command (TRAC), Doc Intro/8.

the larger framework of TRADOC multi-school warfighting centers during 1995-1997. While no decision was taken on that option, it remained a viable approach to dealing with a significant reduction in analysts in the future.<sup>28</sup>

### **Army Logistics Management College**

In June 1990, the Department of the Army Deputy Chief of Staff for Operations and Plans directed TRADOC to complete a comprehensive review of the Army school base to determine the most effective and efficient command and control structure for Army schools, colleges, and training centers not currently assigned to TRADOC. The study was carried out by the "School 21 Task Force." In its final report of November 1990, one of the task force's recommendations was that the Army management schools all be brought under TRADOC to create a "university." The first transfer was to be that of the Army Logistics Management College at Fort Lee, from AMC to TRADOC. On 1 January 1991, TRADOC assumed operational control of the school; on 1 October 1991, ALMC was officially assigned to TRADOC and aligned under CASCOM.<sup>29</sup>

### **Transfer of the U.S. Army Russian Institute and the Foreign Language Training Center-Europe to TRADOC**

Also In the June 1990 directive to review Army schools, the Department of the Army told TRADOC to identify redundancies and to improve efficiency of operation. The following month, under the auspices of Project VANGUARD, the U.S. Army Intelligence and Security Command (INSCOM) completed an analysis of management consolidation and identified a potential 475 personnel spaces that might be phased out through elimination or consolidation of subordinate elements. VANGUARD also recommended that certain training functions currently performed by the major commands be considered for transfer to TRADOC. In light of the recommendations of the School 21 study, discussed above, and Project VANGUARD, INSCOM proposed the elimination of the Foreign Language Training Center - Europe (FLTCE), located at Munich, Germany and the transfer of the U.S. Army Russian Institute (USARI) at Garmisch, Germany, to TRADOC. The USARI's mission was to offer advanced Russian Studies for foreign area officers and military intelligence officers in lieu of in-country training. The FLTCE was responsible for refresher and maintenance training, primarily for INSCOM linguists. During 1991, both agencies were being considered for moves, USARI to the United Kingdom and the FLTCE to Augsburg, Germany. However, at years end, both organizations remained in their old locations.

After considering the proposal of the transfer to TRADOC, the Department of the Army Deputy Chief of Staff for Intelligence (ODCSINT) expressed concerns with it and indicated that ODCSINT had already informally coordinated on the transfer of both FLTCE and the USARI to TRADOC. The Intelligence and Security Command

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28. SSHR, ODCSA, Ft. Monroe, Va., CY 91/I, p. 4.

29 (1) SSHR, ODCST, CY 91/II, p. 24. (2) TRADOC Review of the Army School Base Final Report (School 21 Study), ODCST, 19 Nov 90. (3) Memo ATTG-Y, General John W. Foss to HQDA, DCSOPS, 19 Nov 90, subj: TRADOC Review of the Army School Base. (4) SSHR, ODCSRM, CY 91/II, p. 8.

was directed to coordinate directly with TRADOC on the possible transfers. Concerns were that post-CFE planners had to consider the possibility of having to move the units if they were to continue to perform their missions. The transfer was scheduled to be effective on 1 October 1992. Meanwhile, on 23 May 1991, INSCOM, the Offices of the Department of the Army Deputy Chiefs of Staff for Operations and Plans and for Intelligence, as well as TRADOC and the Defense Language Institute Foreign Language Center (DLIFLC) sent representatives to a conference in Washington, D.C. to iron out the details. Plans at the end of the year were for the FLTCE to be subordinated to DLI, with no changes in operations or functions. On 5 August 1991, TRADOC officially assigned the FLTCE to DLI. The fate of the Russian Institute remained uncertain.<sup>30</sup>

#### **TRADOC Liaison Officer Program**

In July 1990, USAREUR recommended to Department of the Army headquarters that TRADOC'S European troop strength (ETS) quota for liaison officers be reduced from 40 to 20 positions. The Department of the Army Deputy Chief of Staff for Operations and Plans would not support such a reduction, but agreed to support TRADOC in negotiating an ETS quota with USAREUR that was greater than 20 but less than 40. A study performed jointly by the TRADOC Operations Directorate and the TRADOC Field Element was aimed at gaining exclusion of TRADOC's European liaison personnel from ETS controls. The completed study was briefed to the Office of the Deputy Chief of Staff for Operations and Plans in August 1991. At the end of the year, the issue remained unresolved.<sup>31</sup>

#### **Reorganization Actions in the Office of the Deputy Chief of Staff for Training**

During 1989 and 1990, the Office of the Deputy Chief of Staff for Training had undergone major reorganizations. Further reorganization took place in 1991. On 16 September 1991, an Analysis, Studies, and Research Division was created in the Training Development and Analysis Directorate. The new division was the result of the merger of the Training Research and Studies Division and the Plans and Analysis Division. The plans and concepts functions were transferred to the Warfighting Concepts Division. During the year, the Individual Training Directorate (ITD) completed its reorganization when the Aviation Directorate was absorbed by ITD as the Aviation Division, effective 1 October. Also, the former Education Division was redesignated the Education and Training Support Division. The new designation was meant to reflect the division's increasingly responsible role in the delivery of leader development programs and services.<sup>32</sup>

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30. (1) Msg. Cdr USAINSCOM to distr, 111550Z Jan 91, subj: Transfer of USARI/FLTCE to TRADOC, Doc Intro/9. (2) PROFS notes to OCH from Dr. James McNaughton, DLI historian, 27 May 92, 3 Jun 92.

31. SSHR, Operations Dlr, CY 91/II, p. 3.

32. SSHR, ODCST, CY 91/I, p. 2; CY 91/II, pp. 2,163. For a detailed discussion of the 1990 reorganization of the ODCST, see TRADOC ACH, CY 90, pp. 28-30. (FOUO-np)

In the latter part of the year, the Security Assistance Training Directorate underwent reorganization. The command position, previously filled by a colonel, was converted to a civilian position at the GM-15 level. In addition a new office, the Training Policy and Programs Office, was created. Quota management and foreign military sales case preparation functions were moved to the Regional Operations Division, and the position of division chief was changed from that of a lieutenant colonel to a GM-14. The Program Management Branch of the Regional Operations Division was organized geographically; i.e. CENTCOM, PACOM, SOUTHCOM, etc. A new Cost Analysis Branch was also created to assume the mission previously given to the TRADOC Office of the Deputy Chief of Staff for Resource Management.<sup>33</sup>

At the Army Training Support Center (ATSC) at Fort Eustis, the commander established a Total Force Integration Office as a separate and distinct function within the Command Group. The office was responsible for the integration of training support issues reciprocally between the ATSC and the headquarters of the Army National Guard, the U.S. Army Reserve, and the U.S. Marine Corps. Previously representatives of each of those elements had operated as independent liaison officers. The purpose of the reorganization was to provide enhanced visibility and unity of effort between the components. It was also an effort to reduce the effect of reductions in strength by insuring that critical areas continued to be covered.<sup>34</sup>

#### **Unit Relocations**

Efforts to reorganize TRADOC and effect reductions in the Army as a whole had an impact on plans affecting troop units associated with TRADOC activities. In November 1991, the Secretary of the Army approved the relocation of the 63d Signal Battalion from Europe to Fort Gordon, effective in March 1992. That relocation resulted from the reduced Soviet threat, reductions dictated by the CFE agreement, and congressionally mandated reductions in Army strength. On 13 May 1991, Headquarters Department of the Army approved TRADOC's request that the 7th Ranger Training Battalion be transferred from Dugway Proving Ground, Utah, to Fort Bliss, in August 1991. Primary reasons for the move were the continuous increase in operating costs, the remoteness of the area, poor quality of life for the soldier and his family, and unfavorable weather conditions during the winter season.<sup>35</sup>

As Department of the Army plans went forward to bring home overseas-based forces and to reduce the active force to 535,000 by FY 1995, the Secretary of the Army on 3 June 1991 approved the stationing of the following redeploying units on TRADOC installations.<sup>36</sup>

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33. SSHR, ODCST, CY 91/II, p. 80.

34. SSHR, ODCST, CY 91/II, p. 131.

35. SSHR, ODCSRM, CY 91/I, p. 7; CY 91/II, pp. 4, 8-9.

36. SSHR, ODCSRM, CY 91/II, p. 2.

<u>Installation</u>	<u>Spaces</u>	<u>Date available</u>
<u>Fort Benning</u>		
Eng Bn Cbt Corps	809	Sep 95
Med Trk Co	169	Sep 95
HHC S&S Bn	58	Oct 91
 <u>Fort Sill</u>		
Non Div Maint Co	265	Nov 91
Cbt Spt Hosp	143	Oct 93
FSU	51	Oct 92
 <u>Fort Knox</u>		
Non Div Maint Co	274	Dec 91
Ammo Bn HHD	59	Sep 93
Med Trk Co	169	Sep 95
 <u>Fort Leonard Wood</u>		
cbt spt Co (MP)	158	Oct 92
 <u>Fort Sill</u>		
HHB FA Bde	108	Jan 92
8" SP Bn	594	Jul 92
8" SP Bn	594	Feb 92
155 SP Bn	581	Dec 92
Med Trk Co	200	Dec 91
HHD Maint Bn	55	Aug 92
Non Div Maint Co	311	Sep 93
Pers Svc Co	57	Mar 93
 <u>Fort McClellan</u>		
Chemical Co (Decon)	123	Oct 92
MP Co Cbt Spt	146	Aug 92

## **Chapter I**

### **MISSION SUPPORT**

In 1991 as in previous years, the U.S. Army Training and Doctrine Command's central missions were to prepare the Army for war and be the architect of the Army's future. In that year, for the first time since its formation in 1973, the command had a chance to see how successfully its concepts, doctrine, and training were in achieving the first element of the mission on an operational level, as an international coalition of forces joined together in Operation Desert Storm to drive occupying Iraqi forces out of neighboring Kuwait. TRADOC also implemented its wartime responsibilities to mobilize, train, and equip Army Reserve and Army National Guard forces, preparing them for deployment to the theater of operations. A description of TRADOC's performance in this critical supporting role constitutes the first section of the first chapter of the 1991 annual command history, since the transformation of Desert Shield into Desert Storm colored virtually every other aspect of the command's activities during the year. The TRADOC annual history for 1990 contains more detailed information on Desert Shield from August through December of that year.<sup>1</sup>

Sensing inevitable cuts in personnel and funding with the end of the Cold War, TRADOC planners continued to study ways throughout 1991 to scale back manpower and to use physical resources more efficiently. As its name implied, and the second part of its mission demanded, TRADOC pursued its responsibilities to redesign doctrine and reorient training for the new, smaller Army of the future. The remainder of this first chapter discusses how the command performed in supporting those missions, affected as it was by events in Southwest Asia. This first chapter, along with the introduction, sets the context for subsequent chapters which detail concepts and doctrine, force design and weapons development, and the management of training.

### **Desert Shield and Desert Storm**

As the United States began action against Iraq's invasion of Kuwait in early August 1990, the U.S. Army Training and Doctrine Command was called upon to fulfill its mobilization mission. That mission included assisting U.S. Army Forces Command in mobilizing troop units, expanding the training base as necessary, establishing continental United States (CONUS) Replacement Centers, and expediting combat developments. The objective was to provide trained personnel for active component and mobilized reserve component units and combat-ready theater replacements.

TRADOC met its mission responsibilities, and Operations Desert Shield and Desert Storm were successful beyond all expectations. The overall success of the operations was attributed to sound doctrine, comprehensive training, superior equip-

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1. TRADOC ACH, CY 90, HQ TRADOC, June 1991, pp. 200-03. (FOR OFFICIAL USE ONLY--Info used is not protected)

ment, and dedicated people, both military and civilian. What follows is an overview of TRADOC's participation in Operation Desert Storm. The account begins with a brief mobilization chronology that begins, necessarily, with Operation Desert Shield. The overview is supplemented with detail throughout the text in appropriate sections.

### **Mobilization Chronology**

Deployment of Army forces to Southwest Asia technically commenced on "C Day" -- 7 August 1990. At that point in time, active component units were alerted and began deployment to the theater. Unit deployments were historically a U.S. Army Forces Command (FORSCOM) mission except when subject to augmentation by TRADOC assets. Before the initiation of the reserve forces call-up later in August (invoked on 22 August, effective on 27 August), TRADOC was required to provide personnel to fill units to deployment standards. Additionally, the Chief of Staff of the Army had directed that combat units would be deployed at one hundred percent strength. While that action affected only the active component at that time, the result was that TRADOC filled the vacancies in many cases from its base operations support assets, leaving some installations, from the outset, precariously light in some specialties. That shortfall became a significant issue at Forts Knox, Rucker, and Sill. In addition, combat support and combat service support unit deployments, for instance, maintenance units, in some cases left their installations without critical support personnel and capability -- critical in the sense that most were supporting an enhanced mobilization mission.<sup>2</sup>

On 22 August, the President invoked the Selected Reserve Call-Up Authority. That authority allowed him to authorize the Secretaries of Defense and Transportation to order to active duty units and individual members of the Selected Reserve. The call-up allowed for the involuntary levy of 200,000 members of the selected reserve from all services for a period of ninety days, extendible by another ninety days. The Selected Reserve comprised troop program units, individual mobilization augmentees (IMAs), and Active Guard Reserves (AGRs) in the general categories of installation support, Army medical department support, training base expansion, strategic signal support, depot support, port operations, and theater defense.

On 23 August, the Secretary of Defense delegated to the secretaries of the military departments authority to order up to 48,800 selected reservists to active duty. Concurrently, on 23 August, the Commanding General, TRADOC, informed Headquarters Department of the Army that TRADOC would not request reserve component backfill for TRADOC missions. General Foss maintained that, further mobilization notwithstanding, TRADOC missions would be accomplished with existing TRADOC assets in an effort to preserve the spaces in the call-up for the warfighting commander-in-chief.

On 24 August, the first Air National Guard and Air Force Reserve units were called up. The first Army National Guard and Army reserve units were ordered to active duty three days later along with naval and Coast Guard selected reservists.

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2. Msg. CJCS to distr. 091332Z Aug 90, subj: Operation Desert Shield. (SECRET -- Info used is UNCLASSIFIED). For a more extensive study, see TRADOC Support to Operations Desert Shield and Desert Storm: A Preliminary Study, Office of the Command Historian, HQ TRADOC, in publication.

Marine Corps reservists were called up on 11 October to perform combat service support duties. By the end of 1990, over 135,000 selected reservists from all services had been called up.

On 25 August the Department of the Army issued STOP LOSS for the reserve component which suspended conditional resignation, selected changes in service obligations, expiration of service obligation, non-select for promotion, and retirements with less than twenty years qualifying service. STOP LOSS applied to members of mobilized units and those alerted for mobilization as well as IMAs. STOP LOSS was enacted for the active component on 1 September.

Headquarters Department of the Army issued its first mobilization order on 27 August, calling up 45 reserve component units. On the 28th of August, the department issued a second mobilization order bringing to active duty eight reserve component medical units. One hundred fifteen additional units were alerted. On 11 September the Secretary of the Army authorized the involuntary order to active duty of up to 500 members of the Regular Army or Retired Reserve.<sup>3</sup>

Army reserve units began reporting to their mobilization stations on 30 August. The first units deployed on 7 September. Among them were transportation, quartermaster, judge advocate general, and public affairs detachments. On 14 November, the Secretary of Defense announced authorization for the call-up of additional reserve component units to support the operation. That action raised the ceiling to 80,000 -- from 25,000 -- of the Army's portion of the presidential call-up. Also within that action was the authority to call reserve combat units to active duty for as long as 180 days, which could be extended by another 180 days. Three Army National Guard combat brigades -- the round-out brigades -- were activated. The 48th Infantry Brigade (Mechanized) from Georgia and the 256th Infantry Brigade (Mechanized) from Louisiana were activated on 30 November; the 155th Armored Brigade from Mississippi was activated on 7 December. By the first part of December, almost 450 units had been alerted and approximately 400 had received activation orders. Primarily these were dental, transportation, petroleum and water-handling, chemical decontamination, and linguist units, and USAR hospitals.<sup>4</sup>

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3. (1) Desert Shield Briefing Notes, 27 August 1990. (2) Memorandum for Record ATBO-JM, 28 August 1990, subj: Operation Desert Shield Summary #9. (3) Memorandum for Record ATBO-JM, 31 August 1990, subj: Operation Desert Shield Summary #10. (All SECRET/NOFORN/WNINTEL -- Info used is UNCLASSIFIED) (4) Msg, HQDA to distr, 240300Z Aug 90, subj: Suspension of Voluntary Separation of Officers and Enlisted Personnel (STOP LOSS) for Reserve and National Guard. (5) Msg, Cdr TRADOC to HQDA, 231900Z Aug 90, subj: Commander's Sitrep. (All SECRET -- Info used is UNCLASSIFIED) (6) Msg, Cdr PERSCOM to distr, 292200Z Aug 90, subj: Suspension of Active Component Voluntary Separation of Officers and Enlisted Personnel (STOP LOSS).

4. (1) Gen Colin L. Powell, "All Elements of Total Force Give Military Prowess," The Officer, Feb 91, pp. 12-16. (2) John O. Marsh, Jr., "Reserve Reaches Unprecedented Readiness Level," The Officer, Feb 91, pp. 34-38. (3) Msg, HQDA to distr, 142005Z Nov 90, subj: SecDef Authorized Additional Reserve Call-Up.



On 19 January 1991, by executive order, the Secretary of Defense announced T-Day, or partial mobilization. Within that came Order #1, which extended current forces; Order #2, which authorized the call-up of 20,103 members of the Individual Ready Reserve (IRR) which were to report 31 January; and Order #3 (which came out on 20 January), which mobilized the training base units. The announcement of partial mobilization increased the political and military capability of the armed forces. Partial mobilization sent definite signals to allies and enemy alike, indicating a level of preparedness and willingness that the presidential call-up did not.

As the level of mobilization progressed from the first 200,000 to partial, different populations of the reserve were mobilized. The reserve pool was made up of the Ready Reserve, the Standby Reserve, and the Retired Reserve. Each of the three categories was separate and distinct from the other two, subject to call-up at different times under different circumstances. The first line of defense for the reserve component was the Ready Reserve. The largest reserve pool, the Ready Reserve, was also the most highly trained. The Ready Reserve consisted of the Selected Reserve and the larger Individual Ready Reserve (IRR).

The Selected Reserve were those closest to the active component. It included drilling reserve units and individual mobilization augmentees (IMAs). That population was maintained on a regular pay status and trained alongside the active component for specified periods of time. The Selected Reserve was the category mobilized under the initial presidential call-up.

The Individual Ready Reserve made up the remainder of the Ready Reserve. That population did not regularly train with the active component nor was it on any kind of regular pay status. Rather it comprised those individuals who had left the active service for a number of reasons and were eligible for call-up under partial mobilization. The IRR housed the "RT-12" subset which included those personnel trained within the last twelve months, or, those who had left active service a year ago or less. Theoretically, then, the RT-12 comprised the most up-to-date and technically competent portion of the Individual Ready Reserve.

For Operations Desert Shield and Storm, various components of the Ready Reserve were mobilized. At the outset, with the presidential call-up, the Selected Reserve was mobilized. Later, with the declaration of partial mobilization, the remainder of the Ready Reserve was available for call-up. Operation Desert Storm tapped the IRR, and hence the RT-12 population, as well as selective call-up of the retired community.<sup>5</sup>

With the declaration of partial mobilization, troop strength to the Southwest Asian theater increased steadily. By 1 February 1991 the total number of reserve component units in the area of operations was 595; thirty-one units had been dis-

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5. The Standby Reserve was not accessed for Operation Desert Shield or Storm. The Standby Reserve functioned almost as a back-up pool, to be used after the IRR had been exhausted.

patched to supplement the U.S. Army in Europe. A total of 990 reserve component units were on active duty.<sup>6</sup>

On 24 February the ground campaign began, putting into action all the forces that had heretofore been mobilized and massed. United States President George Bush declared two objectives of the military action: First, to drive Iraqi forces from Kuwait, and second, to deny Saddam Hussein the ability to reinforce the theater or pose a threat to Kuwait in the future.<sup>7</sup> By 28 February Operation Desert Storm was over; the ground campaign had lasted a hundred hours. On 9 March Headquarters Department of the Army issued the Demobilization Order authorizing mobilized reserve component units and individuals to be released from active duty as they were identified as being no longer required to support Operation Desert Storm.<sup>8</sup> Operation Proud Return began, comprising the withdrawal of forces, dismantling of the coalition, and demobilization and force reconstruction. Personnel and equipment began the journey out of the theater. By 15 March CONUS replacement centers at Forts Benning and Knox had closed. Fort Jackson remained open, taking the remainder of returning individuals, until 15 May.

On 6 April Operation Provide Comfort was established to provide humanitarian relief to some two million Kurds who had fled northern Iraq and resettled in temporary camps in Turkey and Iran. Touted as the largest international military relief effort since the Berlin Airlift, Operation Provide Comfort comprised some 21,000 military personnel from thirteen countries. The United States carried the lead with over 11,000 personnel -- infantrymen, Special Forces teams, construction and transportation teams, civil affairs teams, and medical personnel.<sup>9</sup>

On 9 June Fort Dix opened to serve as the processing point for the sustainment force. In that respect, Fort Dix functioned much as a replacement center, although with a slightly different mission and agenda. Fort Dix processed active and reserve component individuals to the Southwest Asian theater. Active soldiers arrived, registered, and were sent out on the next available aircraft. Reserve component soldiers were passed through a processing much like the replacement center format and generally departed within seven days. A total of 3,588 soldiers

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6. Army Operations Update, Operation DESERT STORM (U), Information Memorandum #178, 1 Feb 91. (SECRET -- Info used is UNCLASSIFIED)

7. CSA ltr, "Operation Desert Storm," 28 Feb 91, CSA Weekly Summary, 1 Mar 91.

8. CSA, Weekly Summary, 22 Mar 91.

9. (1) Donna Miles, "Helping the Kurds," Soldiers, July 1991, pp. 13-20. (2) Major James A. Franklin, TRADOC LO to Turkey, "Operation Provide Comfort: A TRADOC LO Perspective," unpublished undated ms. (3) Civil Affairs in the Persian Gulf War, A Symposium, Proceedings, 25-27 October 1991, USA JFK Special Warfare Center and School, Fort Bragg, N.C., p. 364.

were processed through Fort Dix before the processing point closed on 25 August 1991.<sup>10</sup>

### **Logistics and the CONUS Replacement Centers**

One of the highlights of Operations Desert Shield and Desert Storm, from the TRADOC headquarters vantage point, was the mobilization and activation of the CONUS replacement centers (CRCs). The CRC concept dated from 1984, had been exercised specifically at Fort Jackson and Fort Lewis, but for all intents and purposes had never been fully tested. With the initiation of mobilization, the replacement center concept came fully to life.

For Operations Desert Shield and Desert Storm, three CRCs were activated - one each at Fort Benning, Fort Knox, and Fort Jackson. TRADOC, the executive agent for the replacement centers, had responsibility for their training and doctrine development; operational project stock development, distribution, and management; and budget program development. TRADOC provided training guidance to replacement center installations, supported the replacement center mission during peacetime training, and provided base operations support during execution. The replacement centers provided command and control of non-unit related personnel flowing to the theater of operations. Individuals were called up and reported to the replacement center from their mobilization station to spend approximately four days processing for deployment. The replacement centers received and processed all Army individual replacements, crews, teams, small detachments and civilians; provided billeting, food service, and other required support functions; ensured that replacements were prepared for deployment and verified processing for overseas replacement (POR) requirements (POR requirements were to be completed at the home or mobilization station prior to arrival at the replacement center); and issued organizational clothing and individual equipment (OCIE). In effect, the replacement center was a staging area.

For Operations Desert Shield and Desert Storm, replacement center operations were housed on the three installations in what was colloquially termed "World War II wood." The structures were outdated, substandard structures scheduled for demolition as new construction was planned. Ironically, had the structures not been available for use, installations would have been hard-pressed to provide the 2,000 to 2,500 billets and the necessary administrative offices required.

The replacement centers began receiving equipment from operational projects in early September.<sup>11</sup> Weapons delivery began mid-month. Equipment lists had to be reviewed to provide necessary equipment for the desert scenario. Ideally, the replacement centers should have been able to take possession of the stockage from

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10. Brfg Slides, "How TRADOC Went to War," prepared by HQ TRADOC CPG, Sep 91.

11. In the grand scheme of what was called the CRC flow, CRCs received equipment (OCIE) to hand out to soldiers as they processed through. The equipment was the stockage that was held within the operational project. The operational project was the stockage level that was held in depots earmarked for specific contingency operations. The operational project was similar to the war reserve in concept.

the operational project within a week's time. From that point the wholesale system was designed to feed the operational project. However, for this contingency, one of the initial, and major, problems was the fact that there was virtually no stock in the operational project. Stockage built up incrementally at all three replacement centers during the fall of 1990.<sup>12</sup>

The CONUS replacement centers at Fort Jackson and Fort Benning were activated on 9 December. Active component unit replacements entered the system immediately, and the first soldiers exited on the 14th.<sup>13</sup> Unit soldiers, while not regulation replacement center mission, were sent through them to expedite their deployment to Southwest Asia and provide on-the-job training for the CRC system. At that point, the replacement center structure was not yet complete. Installation commanders, as commanders of the CONUS replacement centers, initially ran them with existing installation assets. That was a direct result of General Foss' decision to channel as many reserve assets as possible to directly supply the Commander-in-Chief, United States Central Command (USCENTCOM). As noted above, the TRADOC commander's decision resulted in the operation of the replacement centers with in-house resources, which in all three cases, were already strained. All three installations used their pre-existing reception battalion capability to provide early support and processing

The formal replacement center structure was activated on 27 December 1990. The replacement centers were structured with U.S. Army reserve replacement battalions and companies. The total authorized replacement center strength was eight battalions and sixteen companies. Each replacement center was authorized a replacement battalion and five companies except for Fort Jackson, which, because of its anticipated workload, was slated to receive six companies.<sup>14</sup> The actual force structure in place, however, included only three battalions and nine companies overall, to be shared among the sites. In effect, then, each replacement center was run by a battalion and three companies. Any additional units were pieced together from existing assets. Replacement centers were organized at authorized level of organization (ALO) C (Cadre). Augmentation, when and if necessary, was to be provided by the installation. Force structure, in the planning stages at least, determined anticipated flow rate. The replacement centers were structured to process 100 people per assigned company per day. A higher anticipated flow rate would require additional companies in the replacement center. Flow rate would be ultimately determined by theater needs.

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12. Oral history interviews with Ms Dawn Hustus, DCSBOS Directorate of Logistics, HQ TRADOC, 30 April 1991; Mr. Payton Hutsell, DCSBOS Directorate of Logistics, 30 April 1991, both by Dr. Susan Canedy and Mr. Edwin Burgess.

13. (1) Msg. Cdr FORSCOM to distr, 011655Z Dec 90, subj: CONUS Replacement Centers (CRC). (2) Msg. Cdr FORSCOM to distr, 052220Z Dec 90, subj: CONUS Replacement Center (CRC) Activation.

14. Memorandum for Record ATBO-JM, 31 December 1990, subj: Operation Desert Shield Summary #31. (SECRET/NOFORN/WNINTEL -- Info used is UNCLASSIFIED)

Because of the short duration of Operation Desert Storm, the replacement centers never reached a sustained maximum flow rate. What they did experience, while preparing for peak flow, were inaccurate and unpredictable flow rate projections on a continual basis. Not only did that inaccuracy create havoc at the command level, but unreliable projections made it impossible to anticipate proper accommodations for arriving soldiers. Bed space, messing facilities, processing capability, range usage, and transportation all had to be provided resources, readied, and contracted for; inaccurate projections caused unnecessary expense in dollars and manhours, both already in short supply.

### **Training**

According to its mobilization plans, TRADOC prepared to expand the training base in order to train the mission. The scope of the conflict never required full expansion. While TRADOC prepared to train 75,000 members of the Individual Ready Reserve, actually trained were closer to 20,000. Highlights of the training mission included IRR refresher training, heavy equipment driver training, and Kuwaiti training.

TRADOC was involved with developing short train-up programs of a few days in duration for military occupational specialty (MOS) refresher courses. Operations Desert Shield and Desert Storm demonstrated the need to plan and provide the mandatory pre-mobilization refresher training and post-mobilization refresher and reclassification training to IRR soldiers in critical MOSs. In a related action, TRADOC was tasked to interview, select, and package IRR soldiers as replacement squads and crews. While squads and crews could be easily identified and formed, leadership for the squads and crews proved elusive. Most soldiers were judged to be at skill levels 1 or 2 and could not provide the necessary leadership. Moreover, gaining units broke up the squads and crews as they arrived and used them as individual replacements.

Training programs and training support were strained to accomplish the mission. Equipment, ammunition, and instructors were distributed across installation and major command to meet training requirements. The strain was nowhere more apparent than in the requirement for additional MOS 88M, motor transport drivers, in theater. During Operation Desert Shield it was noted that there was a shortage of drivers to support the operation. Headquarters Department of the Army identified a requirement for an additional one thousand 88Ms. To fulfill the requirements, TRADOC and FORSCOM were directed to jointly provide two hundred and sixty 88Ms, two hundred and eighty 88M Advanced Individual Training (AIT) graduates were diverted to Southwest Asia, 149 IRR soldiers were provided 88M familiarization training at 5 CONUS training sites, and CONUS-based forces redistributed 311 reserve personnel. Those one thousand heavy truck drivers were used to make up personnel shortages. Due to the immediate requirement for 88Ms, the MOS 88M AIT was accelerated from an eight-week program of instruction to a four-week program of instruction, and 5 mobile training teams were dispatched to 5 CONUS locations to provide reserve soldiers abbreviated training. TRADOC's school support structure was significantly affected

due to the levy of 190 of its 88M soldiers. Reserve Transportation Corps instructors were often required to augment Fort Eustis's mobile training teams.<sup>15</sup>

Operation "Exodus," a program designed to provide trainee soldiers and members of the permanent party in the training base time to spend part of the Christmas period at home with their families, was canceled for 1990 in December, just prior to execution. The intent in canceling Exodus was to continue to train through the holiday period in order to provide a constant flow of soldiers to the force.<sup>16</sup> The goal was to maximize the number of MOS qualified soldiers by 15 January 1991. A total of 5,707 students, all active Army, graduated early.<sup>17</sup> It was anticipated that subsequent training loads would also be accelerated by the same two-week period so that there would be a continuous flow of trained soldiers to the force. That acceleration, however, did not occur, and most of the soldiers who trained through what would have been Exodus were given leave after their training was completed. The practical result was that Exodus was, in fact, executed training company by training company, in January and February. Cancellation of Exodus created increased anxiety among the soldiers in training and their families, and unnecessary hardships on the permanent party of the training base. At the same time that the training base continued training during the holiday period, FORSCOM and other major commands initiated a liberal leave policy. As might be expected, that apparent contradiction made it more difficult for the soldiers involved to understand the urgency which caused the cancellation of Exodus.

In December 1990, TRADOC was alerted to prepare to train 300 Kuwaiti personnel for service as linguists with selected U.S. Army units in Southwest Asia. Three groups of Kuwaiti students were ultimately trained with a total of approximately 600 deployed to Southwest Asia. The first group consisted of 292 students trained at Fort Dix by drill sergeants from the 3d Basic Combat Training Brigade and members of the 306th Military Intelligence Battalion from Fort Devens. Training included weapons familiarization; nuclear, biological, and chemical warfare; basic first aid; field sanitation; desert survival; introductory signal intelligence training; and military language familiarization. The training began on 7 January and was completed by 14 January. The students deployed from McGuire Air Force Base on 15 January. The second group of sixty students was trained at Fort Devens by the 306th Military Intelligence Battalion with assistance by the Fort Devens Noncommissioned Officer Academy for the soldierization portion of the training. Training began on 28 January and was completed by 4 February. The third group of 269 students was trained at Fort Dix with special orientation conducted by mobile training teams from the Intelli-

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15. (1) Desert Shield oral history interview with Col Al Isaac, DCST, HQ TRADOC, 24 April 1991. (2) JULLS #61030-34200 (00001), title: MOS 88M Deficiency in Southwestern Asia. (3) Desert Shield oral history interview with Maj Gen James Wurman, CG USATC and Fort Dix, 10 April 1991, and Brig Gen David Cooper, DCG USATC and Fort Dix, 23 April 1991, by Dr. Daniel Zimmerman.

16. Schools not affected by the cancellation of Exodus were the School of the Americas, Defense Information School, School of Music, Command and General Staff College, Defense Polygraph Institute, and the ROTC Cadet Command.

17. Brfg Slides, How TRADOC Went to War, prepared by HQ TRADOC CPG, Sep 91.

gence School, the Military Police School, the Staff Judge Advocate School, the Special Warfare Center and School, and the Academy of Health Science. Because of the various orientations and the request for additional weapons training, the training cycle was slightly longer. Students arrived at Fort Dix on 14 February and deployed to Southwest Asia from McGuire on 26 February.<sup>18</sup>

### **Community and Family Support**

Family support was an important mission during Operation Desert Storm. Family support systems were established at once, and augmented and refined over the course of the operations. Headquarters TRADOC had established the Soldier/Family Planning Group at the headquarters level to support installation activities and problems. The group was made up of experienced action officers from the base operations support and morale, welfare, and recreation directorates. Their mission was to resolve systemic problems, respond to hotline calls of an unusual nature, and provide interface for the field to the command. Some of the issues addressed by the group were family care plans, casualty assistance, orders, financial problems, housing concerns, and crisis counseling.<sup>19</sup> Headquarters TRADOC also developed and sent out Army Community Services guidelines for services to family members which were sent down to the supporting installations, although in the interim, most installation community services activities had developed their own. Family support coordinators at all levels organized and participated in family assistance briefings aimed at both the soldier and his family and covered all aspects of deployment.

For the installations, family support organizations included the family assistance centers, rear detachments, and family support groups. Over 520 active and reserve component assistance centers were established in all the states and affected installations in Europe.<sup>20</sup> Assistance centers operated as a single stop for referral and assistance. Generally they were manned by representatives from Army Community Service, the Red Cross, CHAMPUS, and the finance, personnel, legal, dental and medical, and the chaplain's offices, as well as agents from the inspector general's office, the directorate of logistics, the directorate of engineering and housing, and the public affairs office. Most were operated 24 hours a day, seven days a week. Forts Lee, Eustis, and Benning were the first to establish assistance centers operating

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18. Desert Shield oral history interviews with Maj Gen James Wurman, CG USATC and Fort Dix, 10 April 1991, and Brig Gen David Cooper, DCG USATC and Fort Dix, 23 April 1991, by Dr. Daniel Zimmerman.

19. (1) Draft manuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operations Desert Shield and Desert Storm," edited by Mr. James Byrn, 1992. (2) Oral history interview with Ms Shirley Young, CFAD, HQ TRADOC, 24 April 1991, by Mrs. Janet Scheitle.

20. Desert Storm Special Study Project, Operation Desert Storm After Action Report, 16 Oct 91, p. V-2-1. Unpublished manuscript in the Historical Research Collection, Office of the TRADOC Command Historian. (SECRET -- Info used is UNCLASSIFIED)

such a schedule.<sup>21</sup> As early as 20 August 1990, TRADOC had issued information to the assistance centers concerning family support to deploying troops.<sup>22</sup> That had been quickly followed with guidance on family support to the reserves.<sup>23</sup> Assistance centers were established at the installation commander's discretion; thus they were not uniform throughout TRADOC. Some installations chose not to establish them at all, placing the responsibility for family support on Army Community Services or other individual family support agencies. Some installations established an assistance center at the corps level, as did Fort Sill, while some others at the brigade level, as did Fort Lee.

Providing resources for the assistance centers was each installation's responsibility. Consequently, centers had to scramble for facilities which were often inadequate, lacking waiting areas, meeting rooms, training centers, and other space to accommodate a twenty-four hour operation. Telephones, furniture, and office equipment were lacking in many cases.<sup>24</sup> Staffing also came out of installation resources as General Foss' decision not to use call-up forces to man the BASOPS dictated. Staffing for family support was tricky business. Distributing assets across installation was deemed out of the question, as most family support personnel were civilian. The temporary hire pool did not meet the special needs of the job. Most installation commanders found themselves diminishing ongoing services and stretching existing manpower.<sup>25</sup>

The resourcing shortage was most keenly felt at Forts Benning, Knox, Jackson, the three installations that housed CONUS replacement centers (CRCs). Units processed primarily through mobilization in-processing validation centers while individuals processed through CRCs. In both cases, family support services were concentrated with the center to facilitate the in-processing. The stickiest, and most time-consuming issue handled by family support personnel during the mobilization was that of family

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21. (1) Center for Army Lessons Learned Special Bulletin No. 91-2, The Yellow Ribbon, Fort Leavenworth, Kan., June 1991. (2) Memorandum for Record ATBO-JM, 16 August 1990, subj: Operation Desert Shield Summary #1. (SECRET/NOFORN/WNINTEL -- Info used is UNCLASSIFIED)

22. Msg. Cdr TRADOC to distr. 201531Z Aug 90, subj: Operation Desert Shield: Army Community Service (ACS) Guidelines for Services to Family Members.

23. Msg. Cdr TRADOC to distr. 271201Z Aug 90, subj: RC Unit Linkage to Installation Family Assistance.

24. Center for Army Lessons Learned Special Bulletin No. 91-2, The Yellow Ribbon, Fort Leavenworth, Kan., June 1991, pp. 16-18.

25. (1) Draft manuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operation Desert Shield and Desert Storm," edited by Mr. James Byrn, 1992. (2) Oral history interview with Col Frost, DPCA, Ft Knox, 13 March 1991, by Mrs. Janet Scheitle. (3) Family support personnel interviewed at Forts Knox, Benning, and Jackson indicated that this situation occurred with varying degrees of impact. Fort Jackson, which was able to hire high quality temporaries to serve as action officers did not feel the impact of this as much as Forts Knox and Benning.



care plans. Although family care plans were technically an adjutant general responsibility at the unit level, the lack of adequate plans became problematic with the call-up of the Individual Ready Reserve (IRR).<sup>26</sup> Due to the nature of that population, many soldiers reported to their mobilization station or CRC with less than satisfactory or no family care plan. Family care plans allowed for the care and feeding of a soldier's family and attendant assets during his absence. Lack of an adequate family care plan made the soldier nondeployable. Family care plans surfaced as an issue on 7 November 1990 when reserve units began processing through the CRCs.<sup>27</sup> At Fort Benning, twenty-five soldiers did not deploy because they could not put together an adequate family care plan.<sup>28</sup> Headquarters TRADOC studies indicated that, overall in TRADOC, two percent of deploying soldiers had problems with their family care plans, except for Fort Benning where the breakout was almost five percent.

One of the missions of the assistance center was to support and link the rear detachment and family support groups to the active component structure. The rear detachment bore primary responsibility for supporting the families of deployed soldiers. In addition, the rear detachment, as that part of the unit left behind, accomplished unit tasks for installation support, training of replacements, and property accountability. The rear detachment had to be capable of handling a variety of problems, many of them family related, with attention and care.<sup>29</sup> Family support groups were made up of volunteers within the unit that assisted the rear detachment in sustaining families by exchanging support and transmitting information. Support groups were primarily made up of unit spouses, guardians of dependent children, parents, and soldier volunteers. The support group was organized with the very important mission of coordinating among families, deployed soldiers, unit rear detachments, and local support agencies.<sup>30</sup> Support groups played a key role in Operations Desert Shield and Desert Storm by reassuring families, reducing feelings of isolation and anxiety, and sustaining morale. Often the groups played a major role linking the active structure

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26. Oral history interview with Chaplain (Col) Roy Mathis, HQ TRADOC Chaplain, 6 March 1991, by Dr. Susan Canedy and Mrs. Janet Scheitle; Mr. Gerry Compton, Director, Community and Family Activities, HQ TRADOC, 6 March 1991, by Mrs. Janet Scheitle; and Ms Audrey Wise, Chief, Family and Community Support, Fort Jackson, 14 March 1991, by Mr. James Byrn and Mrs. Janet Scheitle.

27. (1) Memorandum for Record ATBO-JM, subj: Operation Desert Shield, Summary #24, 7 November 1990. (SECRET/NOFORN/WNINTEL -- Info used is UNCLASSIFIED) (2) JULLS #31229-08931 (00007), title: Family Care Plans. (3) JULLS #10112-84633 (00006), title: Family Care Plans for RC Soldiers. (4) JULLS #42251-37587 (00808), title: Single Parents' Family Care Plans.

28. Oral history interview with COL Frost, DPCA, Fort Knox, 13 March 1991, by Mr. James Bryn and Mrs. Janet Scheitle.

29. The role of the rear detachment, and some of the problems generated by Operations Desert Shield and Desert Storm, are discussed in section I of The Yellow Ribbon, Center for Army Lessons Learned Special Bulletin No. 91-2, June 1991.

30. FSGs are covered in DA Pam 608-47, A Guide to Establishing Family Support Groups.

to the reserve as assistance centers strove to work through the support groups. Due to their makeup, some groups were better than others; personnel turnover was high as soldiers returned and spouses and others dropped out. Because of the intensity of emotions involved, burn-out was a common problem.<sup>31</sup>

Family support was also addressed at the chaplains' level of activity. At all installations, chaplains organized family support groups through their family life centers and chapel activities. Both community and family activities personnel and the Chaplain Corps prepared for and staffed group activities, counseling sessions, family support groups, and casualty assistance programs. Activity was such that, and mobilization to a level that, the chaplains, Army-wide, were stretched quite thin.

TRADOC had responsibility for providing chaplains to active component units mobilized at TRADOC installations and to reserve forces passing through TRADOC sites. Unit ministry teams (UMTs) deployed as the units deployed. Assigned to operational units at the battalion level, each UMT consisted of a chaplain and a chaplain's assistant. In peacetime, UMTs serve at the installation level. With the mobilization for Operation Desert Shield, installation assets were drawn down to support the deploying forces. For example, Fort Benning lost fifteen UMTs almost immediately as units deployed. That left twenty-five UMTs to do the work that was previously done by forty. That work included serving the families, maintaining ongoing religious services, officiating over weddings and funerals, hospital duty, and community ministering.<sup>32</sup> To make the situation even more complex, deploying units required the correct mix of chaplains to serve the various religious needs of the soldiers. Almost immediately a critical shortage of Catholic and Jewish chaplains was noticed.<sup>33</sup> Fort Benning was left with two Catholic chaplains to serve the installation, and they worked alternate days, twenty-four hours a day. Fort Bliss operated with one Catholic chaplain.<sup>34</sup> Fort Story was left with only one chaplain for the entire installation. All the while, TRADOC installations saw an increase in attendance at chapel services and an increased need for family support.

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31. (1) See section II of The Yellow Ribbon, Center for Army Lessons Learned Special Bulletin No. 91-2, June 1991. (2) JULLS #51931-25100 (00008), title: Family Support Group Role, Authorized Support, and Training. (3) JULLS #10108-25893 (00005), title: Assistance to National Guard and Reserve Component Families.

32. (1) Draftmanuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operations Desert Shield and Desert Storm," edited by Mr. James Byrn, 1992. (2) Oral history interview with Chaplain (Col) Roy Mathis, TRADOC Chaplain, HQ TRADOC, 6 March 1991, by Dr. Susan Canedy and Mrs. Janet Scheitle.

33. TRADOC UMT Training Conference, Radisson Hotel, Hampton, Va., 6-8 May 1991.

34. (1) Ibid. (2) Draft manuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operations Desert Shield and Desert Storm," edited by Mr. James Byrn, 1992. (3) JULLS #10305-90344 (00422), title: Attendance at Chapel Services.

Adding further strain, the Chief of Staff of the Army advised that casualty assistance centers would be staffed with two chaplains. As TRADOC operated sixteen casualty assistance centers throughout the command, a statement of immediate need was sent forward. A call-up of retired Army chaplains was initiated through the Army Reserve Personnel Center.<sup>35</sup> The call-up of retired chaplains was not unlike the call-up of the IRR in terms of quality control, or more specifically, lack thereof. The Reserve Personnel Center initially called for active duty terms of thirty to ninety days, later changing the term to up to one year. Some chaplains called were over-age. Most important, the call-up was too late. The Reserve Personnel Center ordered the chaplains to report on 4 March 1991. The ground war began on 24 February. Had the war turned out differently -- had the Iraqis fought back, had chemical weapons been used, had the United States suffered the mass casualties that were projected -- postwar analysis indicated that chaplain manning at the installations would have been inadequate.<sup>36</sup>

### **Mobilization Planning**

#### **Lesson-Learning from Desert Shield and Desert Storm**

Arguably, the Desert Shield/Desert Storm deployment and employment of troops was the most analyzed application of military force in history. Certainly this was true during the course of the operations and immediately after, as teams from the Center For Army Lessons Learned (CALL), a part of the Combined Arms Center at Fort Leavenworth, collected data; military history detachments roamed the theater, collecting documentation and oral interviews; and historians throughout TRADOC kept close track of emergency operations centers and other hubs of local activity, together with their collections of critical documentation. In addition to the CALL, several other efforts to track successes and failures in the mobilization process sprang up at the conclusion of the operations. The TRADOC Deputy Chief of Staff for Base Operations Support, or DCSBOS, assembled a team to put together information on all aspects of the mobilization effort, including the operation of continental United States (CONUS) replacement centers, port support, and the impact of mobilization on installation support in general. Additionally, the Chief of Staff of the Army, General Gordon R. Sullivan, asked the newly assigned Assistant Deputy Chief of Staff for Concepts, Doctrine, and Development, Brigadier General Robert Scales, to write an analysis of the doctrinal and training changes in the Army since 1973 which transformed the fighting force from the apparent failure in Southeast Asia to the ostensible success of Southwest Asia. Each of these groups anticipated publication of their

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35. Due to the organization of the Chaplain Corps, there was some confusion, and resulting delay, as agencies squabbled over jurisdiction. ARPERCEN, OCCH, and Command Chaplains Offices all had some play in the call-up.

36. (1) Oral history interview with Chaplain (Col) Roy Mathis, TRADOC Chaplain, HQ TRADOC, 6 March 1991, by Dr. Susan Canedy and Mrs. Janet Scheitle. (2) TRADOC UMT Training Conference, Radisson Hotel, Hampton, Va., 6-8 May 1991. (3) JULLS #31952-57700 (00505), title: Timely Call-Up of Retiree Chaplains.

findings in 1992. CALL's publications appeared occasionally, beginning shortly after the deployment first began in 1990 and continuing throughout 1991.<sup>37</sup>

#### **Revision of the TRADOC Mobilization and Operations Planning System (TMOPS)**

As the year began, the latest version of the TRADOC Mobilization and Operations Planning System, or TMOPS, consisted of four volumes, all published or revised during the 1980s. Need for revision of the system became obvious during 1991, as the headquarters exercised nearly all aspects of the plan during Desert Shield and Desert Storm. The headquarters formed a steering committee, composed of action officers from a variety of offices but led by the DCSBOS. The steering committee first recommended the institutionalization of the TMOPS process through development of a regulation, similar to those already fielded by the Department of the Army and Forces Command. The resulting draft TRADOC Regulation 500-XX began circulating for informal coordination throughout the headquarters. A formal coordination draft of the regulation could not be issued, however, until all of the changes to the TMOPS had been completed. Department of the Army made that process even more complex in July by announcing a revision of the Army Mobilization and Operations System (AMOPS); TRADOC Commander General John W. Foss further decided to synchronize TRADOC mobilization plan revisions with the Army's. Substantial reworking of the documents was planned at all levels, steering away from the longstanding multiple volume format to a more concise central document accompanied by functional annexes and appendices, and a focus on execution as well as planning, which changed the names and the resulting acronyms to AMOPES and TMOPES, respectively. Finally, during a general officer warfighting seminar at Fort Leavenworth in November, Chief of Staff of the Army General Gordon R. Sullivan asked new TRADOC Commanding General Frederick M. Franks, Jr., to take on the task of making mobilization into doctrine, not just policy. As a consequence, initial work began on Field Manual 100-17, tentatively titled Mobilization, Deployment, Redeployment, and Demobilization, to place the issue into Army doctrinal literature. The Directorate of Army Doctrine, Deputy Chief of Staff for Concepts, Doctrine, and Developments, assumed the task in close coordination with mobilization experts in the office of the Deputy Chief of Staff for Base Operations Support, who held overall TRADOC propensity for mobilization issues and action.<sup>38</sup>

As within any top-driven organization, extensive changes in mission and execution caused a myriad of collateral effects. Collapse of the Warsaw Pact meant change in the perceived threat to the nation; change in the threat meant alteration of operations and manning plans, which in turn drove the requirements in manpower, organization, and materiel necessary to accomplish the mission; development of requirements meant a concomitant assessment of capabilities and production of documentation. As the year ended, mobilization planners in the Department of the Army and at TRADOC were beginning to assess the complexities of these interrelationships and the extent of the effort needed to rebuild the mobilization planning system.

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37. Memorandum, DCSBOS (Maj Gen Dilworth) to all DCSBOS employees, 12 Feb 91, subj: TRADOC BASOPS Lessons Learned, Doc I/1.

38. Draft, Field Manual 100-17, Mobilization, Deployment, Redeployment, Demobilization, 1 May 1992, Doc I/2.

## **LOGEX 92 Planning**

The Joint Chiefs of Staff scheduled LOGEX (Logistics Exercise) 92 to take place from 12 to 24 July 1992. Army play in the exercise fell under the auspices of the U.S. Army Combined Arms Support Command (CASCOM), a TRADOC major subordinate command located at Fort Lee, Virginia. As with previous versions, LOGEX 92 was designed to be primarily a command post exercise to test combat support and combat service support training, cutting across normal service and command lines and involving both active and reserve component units. Planning for this exercise, laid out in a 24 to 26 June 1991 planning conference at Fort Lee, postulated conflict in the Korean theater and involved that ally's forces as well. Of particular interest to planners was exercise play of many of the same issues and challenges which had confronted Desert Shield and Desert Storm logisticians, including multiservice interaction; organizational structure; interaction of early-deploying units; unit reconstitution; use of host-nation assets; moving, receiving, and employing reinforcement units; and defense and restoration of rear echelon combat support and combat service support organizations. Also of concern was the process of introducing "lessons learned" from the Gulf War into exercise scenarios and play.<sup>39</sup>

## **Management and Productivity Issues**

### **Total Quality Management (TQM)**

Total Quality Management, an amalgam of ideas born in the United States but nurtured in other industrialized countries, notably Japan and Germany, returned to its birthplace in the mid-1980s. The Department of the Army officially declared TQM as an Army objective in 1990, and TRADOC initiated its first monthly executive-level training and awareness seminars in August of that year. Absorption with Desert Shield and Desert Storm slowed implementation, but in May 1991 TQM appeared as a centerpiece to The Army Plan (TAP). Described in that document as a "cultural change," TQM emphasized goal-setting, measured improvement methodology, and an orientation toward customer satisfaction. During 1991, awareness seminars reached down to mid-level managers, and by the end of the year General Franks had added "Foster Organizational Excellence" to the TRADOC mission statement along with "Prepare the Army for War" and "Be the Architect of the Future." The most specific evidence of implementation of TQM methodology came from establishment of process action teams in offices of several deputy chiefs of staff, designed to cut across normal organizational lines and identify regulatory and policy impediments to effective management. In the office of the Deputy Chief of Staff for Resource Management, for example, a process action team began to evaluate the Army Ideas for Excellence

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39. Memorandum, Director, Unit Training, USACASCOM for [exercise participants], 15 May 1991, subject: LOGEX 92 Planning Conference, and enclosure, LOGEX 92 Planning Conference Booklet, Doc 1/3.

Program, to judge whether the program generated good suggestions, and whether good suggestions were then being successfully implemented.<sup>40</sup>

### **Internal Management Control Program**

The command continued application of internal management controls through the year, employing checklists developed by the Department of the Army, the headquarters, and subordinate organizations to monitor performance of the mission in areas sensitive to resource waste and abuse. Use of over 1,500 checklists throughout the command detected 281 weaknesses in 1991, of which 238 were reported as corrected. Of the remaining 43, TRADOC organizations reported 33 as material weaknesses, that is, with actual or potential resource loss involved. For a listing, see Appendix D. TRADOC deemed nine of the 33 to be significant enough to report to the Department of the Army. Those nine included theft of weapons and equipment from the Fort Bliss Rod-N-Gun Club; the gas distribution system at Fort Benjamin Harrison; loss of electronics at the Ordnance Missile and Munitions Center and School; pricing for the Morale, Welfare, and Recreation Fund at Fort McClellan; utilities purchases at Fort McClellan; dining facilities at Fort McClellan; barracks space management at Fort Eustis; direct deliveries by vendors at Fort Gordon; shortfalls in compliance with environmental protection regulations at Forts Gordon, Jackson, and Huachuca. Corrective actions had not yet been completed on the gas distribution system, the loss of property at the OMMCS, the utility purchase questions at Fort McClellan, barracks management at Fort Eustis, and on environmental regulation compliance.<sup>41</sup>

### **Resource Planning**

Several documents and processes guided or affected TRADOC's resource planning for 1991 and beyond. Some clustered under the umbrella of the TRADOC Strategic Plan, formulated as an attempt to integrate efforts directed in five parallel documents. The Strategic Plan served as a capstone document for the Resource Management Update, the Major Command (MACOM) Executive Program Review, the TRADOC Long-Range Plan, the TRADOC Program Objective Memorandum, and the Installation 5-Year Plan. External decisions and plans also affected TRADOC's planning, such as The Army Plan; program management decisions made by the office of the Secretary of Defense and the Office of Management and Budget, weighing congressional hearings and actions against budget requests; and defense management review decisions made by the office of the Secretary of Defense, addressing management efficiencies and base realignments and closure.

The Strategic Plan, issued in July, focused on integration and flexibility. It defined goals and imperatives for near-, mid-, and long-term planning processes. To

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40. (1) Msg, Director of Army Management to Army Major Commands, 171220Z Oct 91, subj: Draft AR 5-1, Army Management Philosophy, Doc 1/4. (2) SSHR, ODCSRM, CY 91/II, pp. 11-12.

41. (1) Memo ATRM-MS, DCSRM to TRADOC Staff, n.d. [Sep 91], subj: Proposed Material Weaknesses for TRADOC Annual Assurance Statement to HQDA, Doc 1/5. (2) Memo ATRM-M, Gen Franks to Secretary of the Army, n.d. [Oct 91], subj: FY 91 Annual Assurance Statement on Internal Management Controls, Doc 1/6.

assist in the preparation of associated documents, it attempted to define both the objectives derived from the imperatives and the relationship of the TRADOC staff and subordinate commands to each objective, given the objective's central mission orientation or "peg." For example, the 1991 version of the Strategic Plan showed the objective of reducing course lengths through efficiencies and automation as being hooked primarily on "training" and "information management" pegs, but also as having some lesser impact on modernization and base operations. In all, the plan offered an excellent overview of the command's midyear assumptions about the state of the world and the American Army, and consequent impact on TRADOC's roles, goals, and missions. TRADOC planners wisely stressed flexibility in the strategic planning process, however, since before the year was out at least one of the plan's central assumptions had been overtaken by events. Disintegration of the Soviet Union into contentious republics meant it could no longer "remain a threat along with emerging regional powers."<sup>42</sup>

As noted, five documents formed the pillars of the Strategic Plan-- the Resource Management Update, the MACOM Executive Program Review, the TRADOC Long-Range Plan, the TRADOC Program Objective Memorandum (POM), and the Installation 5-Year Plan. Annual permutations of the first three of these appeared during the course of the year; the TRADOC POM for the years 1994-1999 was scheduled for release in January 1992, and the installation plan for 1993-1998 in May 1992.<sup>43</sup>

The Resource Management Update for fiscal years 1992 and 1993 submitted to the Department of the Army in May and the executive program review submitted in June set the tone carried over into the coordinating draft of the POM at the end of the year -- TRADOC was "broken." Both of the TRADOC Commanding Generals sent the same message to the headquarters, summed up in General Foss's handwritten note on the Resource Management Update:

We have long passed the nice to have, need to have stage. We are down to must have or we cannot do. This is against my nature but we have lost all our flex!

Funding and manpower problems existed across the mission spectrum in budgets proposed for fiscal year 1993. Training resources fell short in several categories, including language and aviation training, and training support. The ROTC Cadet Command anticipated shortfalls in instructors because of congressional prohibition of use of Army National Guard and Reserve personnel, and in scholarship funds. No additional resources existed for significant force structure and equipment changes made necessary by contraction of the Army and Desert Shield and Desert Storm lessons. Base operations continued to be seriously underfunded, resulting in an estimate that TRADOC would be able to accomplish only half of real property recurring maintenance requirements. Midyear estimates indicated a need for minimum additional funding of \$150 million in fiscal year 1992 and \$275 million in fiscal year 1993.

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42. Memo ATRM-P, Maj Gen van Loben Sels to TRADOC Commanders, Commandants, and Staff, n.d. [July 1991], subj: TRADOC Strategic Plan, Doc 1/7.

43. Memo ATRM-P, DCSRM to TRADOC commanders/commandants and staff, n.d. [Jul 91], subj: TRADOC Strategic Plan, Doc 1/7.

Although the Department of the Army projected some budget relief for 1993, estimates by the end of 1991 still projected a shortage of \$80 million.<sup>44</sup>

TRADOC's planning process, however, produced more than just complaints. Drafts of the POM carried recommendations to the Department of the Army about significant changes designed to channel funds and manpower away from less critical areas into arenas like base operations caught short. Recommendations included closing more of TRADOC's bases while keeping resources within the command; identifying units returning from overseas as early as possible, and planning for resources necessary for basing in the United States; divesting TRADOC of the Defense Language Institute, and transferring executive agency for Defense Department language training to the Navy. Other recommendations include placing a virtual moratorium on military construction, using savings to rebuild a seriously degraded infrastructure; limiting new construction to that required for health, safety, environmental requirements; and force reduction and rebasing considerations.<sup>45</sup>

### **Commercial Activities Management**

In many base operations functions such as messing, laundry, and custodial services, potential existed for saving money through use of commercial contracts rather than government labor. Under mandate from the congress, the Department of the Army had conducted commercial activities studies for several years. In some cases, studies showed the likelihood of real savings; in other cases, few resources would be saved or Army resources could perform the function more cheaply or efficiently. In virtually every case where contracting threatened government jobs, the need to insure fairness meant detailed studies performed over many months with the possibility of litigation regardless of the outcome. Recognizing that lengthy studies added expense and adversely affected morale, the congress added language to the military appropriations act of 1991 which prohibited expenditure of funds for commercial activities studies of single functions which were more than two years old, and for multiple functions which were more than four years old, beginning six months from the time of the act's passage in November 1990. The effect of the act's language was to force completion or cancellation of many ongoing studies by May 1991, including those single-function studies begun before May 1989 and multiple-function studies begun before 1987. Implementation of this deadline resulted in cancellation of 36 of 41 ongoing commercial activities studies in TRADOC.<sup>46</sup>

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44 (1) Memo, DCSR (Maj Gen Hagwood) to Dir, Prog Analysis Eval, OCSA, 11 Jun 91, subj: TRADOC MACOM Executive Program Review, Doc I/8. (2) TRADOC Commander's Statement, FY 92-93 Resource Management Update, n.d. [May 1991], Doc I/9. (3) TRADOC FY 94-99 POM Input, Commander's Statement, 10 Jan 92, pp. 1-6, Doc I/10.

45. TRADOC FY 94-99 POM Input, 10 Jan 96, p. 5, Doc I/10.

46. (1) Section 8087, P.L. 101-511, Laws of the 101st Congress, 2nd Session, 5 Nov 90. (2) SSHR, ODCSRM, CY 91/I, p. 10. (4) MFR, ODCSRM, 10 May 91, subj: Management Study of Commercial Activities Function, Doc I/11.



The congressional action also resulted in a change in the way TRADOC did its commercial activities business. In January 1991 the Director of Management, Department of the Army, directed development of a new TRADOC commercial activities management plan. In response, TRADOC's Assistant Deputy Chief of Staff for Resource Management directed a study of the command's plan on 4 February. About three weeks later, on 26 February, the TRADOC Chief of Staff approved a proposal to make the command's commercial activities program virtually entirely voluntary, placing most commercial activities decisions and options in the hands of installation commanders. A subsequent in-depth study of commercial activities resulted in recommendations aimed toward decentralizing the program, redirecting the headquarters role toward consultation, and decreasing the number of reviews and the relative dollar levels at which reviews became necessary. The TRADOC Chief of Staff approved study recommendations on 16 April; requisite requests went forward to the Department of the Army to grant waivers of certain regulatory and policy stipulations, and to seek relief from statutory requirements, which impeded the new TRADOC approach (examples cited below). Although the Director of Army Management expressed reservations about certain aspects of the command's plan, TRADOC went forward on its own where possible to delegate responsibility to installation commanders and streamline the process, eliminating major command review of basic documentation.<sup>47</sup>

#### **Funding for Fiscal Year 1991 and Budgeting for Fiscal Year 1992**

Obligated funding for the Training and Doctrine Command (Operations and Maintenance, Army) for the fiscal year which ended 30 September 1991 amounted to \$2.44 billion in fiscal year 1992 constant dollars. This amounted to a 99.98 percent obligation rate against budget, and included \$67 million in year-end funds made available by the Department of the Army. The total did not include the approximately \$228 million in Desert Shield and Desert Storm funds provided by the Department of the Army. The \$2.44 billion represented a continuing decline in normalized buying power (reduction in real dollars plus effects of inflation) amounting to 35 percent since 1987. One central measure of the impact of the decline in funding was provided by comparison with the level of training load, which had only been reduced by

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47. (1) Msg. Director of Army Management to Major Commands, 291600Z Jan 91, subj: Congress Directs Timely Completion of Commercial Activities Cost Competitions, Doc I/12. (2) MFR, ODCSR, 10 May 91, subj: Management Study of Commercial Activities Function, Doc I/11. (3) Memo, ODCSR (Maj Gen van Loben Sels) for Commanders, TRADOC Installations, 3 Jun 91, subj: Commercial Activities, Doc I/13. (4) Memo, DCSR (Maj Gen Hagwood) for Director of Army Management, 9 May 91, subj: Request for Delegation of Transfer Cost Study Approval Authority, Doc I/14. (5) Memo, DCSR (Maj Gen Hagwood) for Director of Army Management, 10 May 91, subj: Request to Delegate Approval Authority for Direct Conversions and Simplified Cost Comparisons, Doc I/15. (6) Memo, DCSR (Maj Gen Hagwood) for Director of Army Management, 26 Aug 91, subj: Costing Permanent Intermittent and Temporary Employees in Commercial Activities Most Efficient Organizations, Doc I/16. (7) Msg. Director of Army Management to TRADOC Chief of Staff, 201515Z Jun 91, subj: FY 92 Commercial Activities Program Plans, Doc I/17.

26 percent. A chart comparing normalized buying power of OMA funding, 1987 through 1997 projections, appears as Chart I.<sup>48</sup>

As noted in discussions of the June 1991 Resource Management Update, budget projections for fiscal year 1992 fell short of what the command felt was necessary, despite an addition of \$122 million by the Department of the Army before the end of the year, and an infusion of \$6.5 million earmarked for Desert Shield and Desert Storm expenses. Because of congressional delays in establishing 1992 defense appropriations and consequent delays in establishing the Department of the Army's budget, TRADOC operated from a funding letter during the first quarter of the new fiscal year.<sup>49</sup>

### Personnel and Manpower

#### Command Strength

Command strength figures for fiscal year 1991 are shown at Table I. Manpower requirements and allocations for the primary TRADOC missions as of 31 December 1991 are shown at Table II. Trends for manpower authorized and assigned to TRADOC from 1987 to 1991 and projected through 1997 appear at Table III. As with budget figures, strength accounting reflected rapidly diminishing resources available to accomplish the same, or increased, missions. Commandwide numbers of assigned military and civilian personnel fell more than three percent over totals reported for the end of fiscal year 1990, with much heavier cuts in the offing.<sup>50</sup> The largest disparity existed in the number of enlisted assigned (42,000) versus authorized (37,000), as TRADOC installations absorbed personnel redeploying from Desert Shield and Desert Storm and returning to the United States with units reassigned from Europe. Department of the Army supplied little additional funding for this extra burden on TRADOC installations. The bulge in enlisted personnel did not hold true for officers, and the command continued to fall short in the number of officers assigned (7,900) versus the number authorized (9,000). As in previous years, the shortage hit hardest in the field grades.<sup>51</sup>

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48. Briefing Chart ODCSRM-1A, HQ TRADOC Review and Analysis, First Quarter 1992, 21 Feb 92, subj: Overview of OMA Funding (data as of 31 Dec 91), Doc 1/18.

49. Briefing Charts ODCSRM-1A and ODCSRM-1B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Overview of OMA Funding (data as of 31 Dec 91), Doc 1/18 and 1/19.

50. By the end of the calendar year, ODCSRM Force Management Directorate reported an allocation figure of under 80 thousand (see Table III) which would be a drop of nearly nine percent.

51. Briefing Charts, ODCSRM-FD, Manpower Trends FY 1987-1997, n.d. [November 1991], Docs 1/20 - 1/21.

## Personnel Management

Shrinking resources, both in appropriated funds and authorized personnel, posed challenges for management of personnel actions to insure equitable treatment for all members of the work force. Among officers, the Army aimed toward reducing by 11,500 by the end of fiscal year 1992. Programs to meet that goal were just getting under way at the end of the calendar year, including voluntary retirement for those eligible; voluntary early retirement, with incentives to partially offset losses in retirement; voluntary separation, again with financial incentives for those who would otherwise be mid-career; early release for those who had not yet served their full active duty requirement; and, should it be necessary, selected involuntary early retirement.<sup>52</sup>

Enlisted soldiers were given retirement and separation opportunities similar to those given officers. The Army aimed toward a reduction of nearly thirty thousand enlistees, projecting most as voluntary separations. While Army planners anticipated that the highest number would take advantage of voluntary separation incentives rather than taking early separation opportunities, indications were by the end of the calendar year that early separations would exceed projections by two or three times, greatly diminishing the need for involuntary actions.<sup>53</sup>

The permanent civilian work force shrank by about 2,600 personnel between the end of fiscal year 1990 and the end of the first quarter of fiscal year 1992, 31 December 1991. This decline was due in part to the freeze on hiring civilians into permanent positions imposed by the Department of the Army in fiscal year 1990, which continued despite the needs imposed on the command by Desert Shield and Desert Storm; more than 1,600 temporary employees were hired to meet contingency needs. Neither the Department of the Army nor TRADOC mitigated the requirement to meet projected civilian end strengths. Hence, some TRADOC installation commanders found themselves in the paradoxical situation of conducting a reduction in force at the same time that jobs were being announced. A four percent attrition rate accounted for the bulk of the command's civilian personnel cutback, but necessary reduction-in-force actions in 15 of 21 TRADOC installations and organizations resulted in the loss of 430 jobs across TRADOC in fiscal year 1991 and the first quarter of fiscal year 1992. Reductions-in-force were already being planned for the remainder of fiscal year 1992, since the four percent rate would leave the command about 500 workers over the level of 29,900 civilians set by program budget guidance for the beginning of fiscal year 1993. Cuts in the work force also complicated ef-

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52. Briefing Chart ODCSBOS-10B, HQ TRADOC Review and Analysis, 21 Feb 92, subj: Officer Separations and Retirements, Doc 1/22.

53. Briefing Chart ODCSBOS-10A, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: Enlisted Early Retirement and Separation Programs, 21 Feb 92, Doc 1/23.

forts to civilianize base operations leadership positions as the Army continued its policy of shifting soldiers to operational billets.<sup>54</sup>

### Quality of Life Programs and Issues

As the section on Desert Shield and Desert Storm notes, TRADOC put a great deal of emphasis on aspects of the lives of soldiers and their families during crisis operations. This concern extended beyond the contingencies, however, and posed complex issues for the command's planners as reduced resources threatened installation infrastructure and programs. Commanding Generals Foss and Franks each expressed their commitment and concern during 1991 about maintaining and enhancing the quality of soldiers' lives as they served in TRADOC.<sup>55</sup>

### Education

The Army's policy decision to increase the number of civilians in high-level management positions, freeing officers for command positions, led logically to the conclusion that civilian managers needed formal education parallel to, if not equivalent with, their officer peers'. This commitment had led to development of the Army Management Staff College (AMSC) in 1988 and less extensive courses such as Organizational Leadership for Executives (OLE) at Rock Island Arsenal, the Leadership Education and Development (LEAD) course in the Center for Army Leadership at Fort Leavenworth, and the Personnel Management for Executives (PME) course offered at sites around the country through the Office of Personnel Management. Participation in this four-tiered program by TRADOC civilians in 1991, or rather the lack thereof, provided yet another cause of concern in the command. Of 1,225 TRADOC civilians eligible for AMSC in fiscal year 1991, 75 attended. Of 350 eligibles for the Rock Island course, 29 completed it. Attendance at LEAD was somewhat better, 609 of a possible 1,459. An estimated 106 eligibles out of 356 attended PME.<sup>56</sup>

Cause of the lack of attendance were twofold. First, eligible mid- and upper level managers, by definition, already held posts with considerable responsibility, and

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54. (1) Briefing Chart ODCSBOS-2A, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: Civilian Personnel Strength Trend, 21 Feb 92 (data as of 31 Dec 91), Doc 1/24. (2) Briefing Chart ODCSRM-2-B, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: Civilian Manpower Program Execution, 21 Feb 92 (data as of 31 Dec 91), Doc 1/25. (3) Briefing Chart, ODCSBOS Civilian Personnel Directorate, 2 Aug 91, subj: Civilian Personnel Reductions, Doc 1/26. (4) Msg, TRADOC DCSR (Gen Franks) to Commander, USAARMC (Maj Gen Foley), 021900Z Jan 92, subj: Civilianizing Ft. Knox AG Position, Doc 1/27. (5) Msg DAMO-ODL, HQDA to Major Commands, 311735Z Jul 91, subj: Proposed Civilianization of Military Police BASOPS, Doc 1/28.

55. (1) Ltr, CG TRADOC (Gen Foss) to Chief of Staff of the Army (Gen Sullivan), 23 Aug 91, subj: [end-of-tour report], Doc 1/29. (2) Draft MFR, CG TRADOC, n.d. [Aug 91], subj: Commander's Intent, Doc 1/30.

56. Briefing Chart ODCSBOS-9, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: Civilian Leader Development, 21 Feb 92 (data as of 31 Dec 91), Doc 1/31.

supervisors were wary of allowing extended absence. Second, TRADOC participation in AMSC and OLE was governed by quotas set by the Department of the Army. The shortage of quotas in OLE was particularly acute; TRADOC estimated that with present rules in place, sending all the command's eligibles through would take more than seven years. The LEAD course took place in a TRADOC organization, so quotas were easier to come by. Attendance at PME seemed low, but the command's leadership development managers were not sure enough of the accuracy of the data supplied by the Office of Personnel Management to say for sure whether a problem existed.<sup>57</sup>

During the first three months of his command, General Franks addressed four brigade and battalion pre-command courses. At each of those occasions he was asked a specific question about the Army's commitment to spousal education, especially for spouses of senior non-commissioned officers, focused on Army mission challenges and spousal roles. The TRADOC commander commissioned a review of spousal education which found a focus almost entirely on officers' spouses. As a result of the review, General Franks commissioned the Center for Army Leadership at Fort Leavenworth to design a program taking into account the needs of "NCO, civilian, warrant officer and reserve component leaders," aiming to "develop spouse leaders that can contribute toward increasing Army-family quality of life."<sup>58</sup>

#### **Equal Employment Opportunity and Affirmative Action**

TRADOC's commitment to equal employment opportunity continued to be demonstrated in the total numbers and percentages of minorities and women employed by the command. Minorities comprised 24.2 percent of TRADOC's work force at the end of fiscal year 1991, as compared to 13 percent in the national work force. Over 38 percent of the command's employees were white females. However, progress was slow toward bringing the numbers of minorities and women into the command's middle to upper management (GS and GM 13 through 15 grade) labor force into line with the nation's labor force. At the end of fiscal year 1991, minorities represented 11.1 percent of the command's upper grade civilian workers; at the headquarters, the percentage was 11.9 percent. White females held 10.8 percent of TRADOC's higher ranking jobs, including 12.5 percent of those in the headquarters; TRADOC equal opportunity monitors characterized this group as severely underrepresented. Neverthe-

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57. Briefing Chart ODCSBOS-9, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: Civilian Leader Development, 21 Feb 92 (data as of 31 Dec 91), Doc 1/31.

58. Msg. Cdr TRADOC (Gen Franks) to Senior Leadership, Department of the Army, and Senior TRADOC Commanders, 031630Z Jan 92, subj: Army Spouse Education, Doc 1/32.

less, the percentages of minorities and women in higher ranks had increased nearly two percentage points since the end of fiscal year 1990.<sup>59</sup>

### **Safety and Health Issues**

TRADOC's overall safety record was quite good through the course of fiscal year 1991 and into the first quarter of fiscal year 1992. Total military injury rates fell below Army ceilings by a significant amount in three of four quarters in 1991 and in the first quarter of 1992, taken both comprehensively and by installation, on and off duty. The same kind of positive record existed for operation of Army motor vehicles and for aviation accidents. Army motor vehicle accidents averaged less than one-half per million miles driven. Aircraft accidents in TRADOC remained below two per hundred thousand flying hours, well below the Army rate of twelve. The command continued to fly about one quarter of the Army's total number of hours with about a tenth of the Army's aircraft.<sup>60</sup>

Two areas of concern surfaced during the year. The first involved work time lost to TRADOC under the provisions of the Federal Employees Compensation Act, due to debilitating injury or illness. While overall TRADOC rates remained below the command's goal, first quarter performance at seven installations indicated that they would break through the ceiling. The second potential problem involved fatalities. Between 1 October and 31 December 1991, thirteen soldiers lost their lives in acci-

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59. (1) Briefing Chart ODCSBOS-3A, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: EEO - Commandwide (All Grades), 21 Feb 92 (data as of 31 Dec 91), Doc 1/33. (2) Briefing Chart ODCSBOS-3B, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: EEO - Commandwide (GM/GS 13-15), 21 Feb 92 (data as of 31 December 1991), Doc 1/34. (3) Briefing Chart ODCSBOS-3C, HQ TRADOC Review and Analysis, First Quarter FY 92, subj: EEO - HQ TRADOC (GM/GS 13-15), 21 Feb 92 (data as of 31 December 1991), Doc 1/35.

60. (1) Briefing Chart CSO-1A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Military Injury Rate (data as of 31 Dec 91), Doc 1/36. (2) Briefing Chart CSO-1B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Installation Military Injury Rate (data as of 31 Dec 91), Doc 1/37. (3) Briefing Chart CSO-1C, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Military Injuries - On Duty (data as of 31 Dec 91), Doc 1/38. (4) Briefing Chart CSO-1D, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Military Injuries - Off Duty (data as of 31 Dec 91), Doc 1/39. (5) Briefing Chart CSO-2A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Army Motor Vehicle Accident Rates (data as of 31 Dec 91), Doc 1/40. (6) Briefing Chart CSO-2B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Installation Army Motor Vehicle Accident Rates (data as of 31 Dec 91), Doc 1/41. (7) Briefing Chart CSO-4, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Aviation Accident Comparison Class A-C (data as of 31 Dec 91), Doc 1/42.

dents. Of this number, eight were from accidents in privately owned vehicles, more than twice the number than during the first quarter of 1991.<sup>61</sup>

TRADOC commanders and commandants, assembled at Fort Monroe on 23 August 1991, heard new TRADOC Commanding General Franks put safety at the top of his list of initial guidance, calling it "a commanders' program."<sup>62</sup> To follow this lead, TRADOC sought to imbed safety training throughout the training curriculum. The Command Safety Office continued work on a "progressive and sequential comprehensive leader training program." Work was completed on the officer training program. In the noncommissioned officer education system, modules in the professional leader development course, the basic noncommissioned officer course, the advanced noncommissioned officer course, and the sergeants major course were all in various stages of development, coordination, and fielding, with an emphasis on risk management, force protection, and prevention of fratricide in training and in combat.<sup>63</sup>

### **Physical Security and Law Enforcement**

Because of the potential for terrorist attack, all TRADOC installations were in a heightened state of security for the duration of Desert Shield and Desert Storm, and installation access was limited. Not coincidentally with restricted access, increased readiness conditions, and the risks imposed by more frequent random searches, the level of drug, violent, and property crimes dipped to three-year lows during the first and second quarters of the fiscal year. TRADOC levels in these three categories remained well below overall Army rates. The command attributed a slight rise in drug offenses to better reporting of positive urinalysis tests to military police authorities.<sup>64</sup>

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61. (1) Briefing Chart CSO-3A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Lost Time FECA Claim Rates (data as of 31 Dec 91), Doc 1/43. (2) Briefing Chart CSO-3B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Installation Lost Time FECA Claim Rates (data as of 31 Dec 91), Doc 1/44. (3) Briefing Chart CSO-5A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Fatal Accidents (data as of 31 Dec 91), Doc 1/45. (4) Briefing Chart CSO-5B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Fatal Accidents - By Type (data as of 31 Dec 91), Doc 1/46.

62. Briefing Chart, Commanders Call Read Ahead for Gen Franks, 23 Aug 91, subj: Initial Guidance, Doc 1/47.

63. SSHR, CHO CY 91/II, p. 5.

64. (1) Briefing Chart DCSBOS-8A, HQ TRADOC Review and Analysis, FY 92, 21 Feb 92, subj: Drug Crimes, Doc 1/48. (2) Briefing Chart DCSBOS-8B, HQ TRADOC Review and Analysis, FY 92, 21 Feb 92, subj: Violent Crimes, Doc 1/49. (3) Briefing Chart DCSBOS-8C, HQ TRADOC Review and Analysis, FY 92, 21 Feb 92, subj: Property Crimes, Doc 1/50.

## Family and Community Activities Issues

Family and community support activities related to Desert Shield and Desert Storm are covered in depth above and in the TRADOC Annual Command History for 1990.<sup>65</sup> Other issues did arise in the effort to enhance programs designed to improve quality of life for soldiers and their families, particularly surrounding activities supported by non-appropriated funds and management of child care.

Management of TRADOC's non-appropriated single funds came under scrutiny during the course of 1991. The single fund concept, born in the 1980s, pooled all resources from non-appropriated fund activities, including percentages of profits made by the Army-Air Force Exchange System and the scheduled airline ticket office and other travel activities on the installation, into one account. This concept allowed for dispersal of resources across activities, making it possible to continue unprofitable activities that were still considered to be important to the community, such as craft centers. A combination of factors, including conservative fund management, delays in executing large dollar amount construction contracts, and the overall good health of the program, led to a bulge in Army single fund bank accounts of \$69 million, over \$46 million of which belonged to TRADOC installations. Given shortfalls in other resource areas and the perception that quality of life for soldiers and their dependents, Department of the Army single fund monitors urged rapid execution of all scheduled construction, development of sound planning, and, where possible, reduction of user fees to absorb all but \$24 million of the accounts by the end of fiscal year 1992. The alternative, higher headquarters noted, was centralized management of all single funds. Commanders of smaller TRADOC installations such as Carlisle Barracks and Fort Monroe noted that such large single fund savings accounts were far from uniformly distributed, and that installations with small populations in many cases had difficulty in maintaining existing infrastructure, much less executing costly building programs, and asked for development of innovative ways in which excess revenues could be shared across the command.<sup>66</sup>

Deployment of single parents, or both parents, of Army children during Desert Shield and Desert Storm highlighted an area of concern for TRADOC for the last half decade. With the increase in the number of single-parent families, and two-parent families with both parents employed outside the home, the need for occasional child care had evolved into a requirement for child development. Studies in TRADOC showed that the command met less than a third of the demand for such services in 1991. The Army sought to resource the need in two ways, first, by providing

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65. TRADOC ACH, CY 90, pp. 205-06. (FOR OFFICIAL USE ONLY-- Info used is not protected) For a thorough accounting of family support activities affecting a TRADOC organization (The Ordnance Missile and Munitions Center and School), see USAOMMCS Papers, Number One: Redstone Arsenal Family Support Group Activities during Desert Shield/Desert Storm, 1990-91 produced by the office of the OMMCS Command Historian (1992).

66. The reduction of fund savings accounts would also likely be helped by the breakout of billeting, one of the most profitable non-appropriated fund activities, in fiscal year 1992. Briefing chart ODCSBOS-7A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: NAF Cash (data as of 31 Dec 91), Doc I/51.



appropriated funds for employees, and second, charging fees that accrued to the non-appropriated single fund. Installations failed to capitalize fully on available appropriated funds, even as patron fees fell short of non-appropriated fund expenses. TRADOC urged installations to manage resources more effectively, noting that the shortfall in appropriated fund obligations (\$ 0.9 million) could more than offset the difference between non-appropriated fees and expenses (\$0.6 million).<sup>67</sup>

## **Logistics and Facilities Management**

### **Funding Issues**

TRADOC spent a great deal of time and effort during 1991 in efforts to manage funding effectively and fairly, assuring that TRADOC got its fair share, and constructing plans based on the diminishing availability of funds. Managers wrestled with variations of the industrial funding concept, that is, requiring each "customer" organization to pay for goods and services provided by other organizations. This overall concept affected TRADOC in several ways. First, the command sought, and got, action on the problem of funding repairs of depot-level reparable equipment belonging to units of other major commands which were tenants on TRADOC installations. After a good deal of negotiation with the Department of the Army and other major commands (not all of which was formalized before the year ended), expenditures for parts for equipment owned by non-TRADOC organizations became reimbursable on 1 November 1991. As part of yet another initiative to reduce and balance costs, two TRADOC installations, Fort Sill and Fort Leavenworth, became test beds on 1 October 1991 for a defense management review decision mandating creation of public works centers. Such centers were conceived to provide single-source management of installation engineering, housing, and logistics support and, not coincidentally, the ability to charge customers appropriately for services rendered. In addition to assisting the two lead installations in such areas as setting appropriate rates for services, Headquarters TRADOC assumed responsibility for studies aimed at creating geographically oriented public work centers for the Virginia Peninsula (Forts Monroe, Eustis, Story, and Lee) and for Central Pennsylvania (Fort Indiantown Gap, Carlisle Barracks, and Letterkenny Arsenal), as part of an overall study of management efficiencies which could be realized through regionalization.<sup>68</sup>

### **Facilities Issues**

Funding for repair and maintenance remained the single most critical issue for TRADOC facilities managers. Real property maintenance funding fell consistently below needs even at more than \$450 million in fiscal year 1991, and was projected to

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67. (1) Briefing chart, ODCSBOS Community and Family Activity Directorate, TRADOC Chiefs of Staff Conference, 26 Feb 92, subj: Child Development Centers, Capability as a Percentage of Demand, Doc 1/52. (2) Briefing Chart DCSBOS-7B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Child Development Services Resourcing (data as of 31 Dec 91), Doc 1/53.

68. (1) Fact Sheet, ODCSBOS, 5 Feb 92, subj: Stock Funding of Depot Level Reparables, Doc 1/54. (2) SSHRs, ODCSBOS, CY 91/I, Office of the TRADOC Engineer, CY 91/II, p. 2.

decline sharply to levels significantly below \$200 million in fiscal year 1993 and beyond. This, despite an existing backlog of maintenance and repair, the bill for which exceeded \$550 million at the close of the fiscal year. All of the command's budgetary and management planning documents sounded the same theme -- projected budgets would not cover progressive deterioration of the existing infrastructure, much less address the backlog. TRADOC advocated sharing good ideas and increasing regionalization, but the command's planners foresaw facilities reduction as the only realistic answer to property maintenance, along with reprogramming of military construction funding.<sup>69</sup>

Maintenance and repair deficiencies showed up across the board in the command, but none were of more concern than the barracks housing soldiers. Sixteen TRADOC installations reported that an average of 42 percent of their barracks met self-certification standards, primarily due to the backlog of real property maintenance and repair. Only two installations, Fort Gordon and Fort Monroe, reported a hundred percent certification. Seven installations reported no certifications. TRADOC proposed self-help programs and reorientation of funding regulations and priorities, but also noted the need for additional resources in military construction and maintenance funding. Fiscal year 1991 surveys indicated a high vacancy rate in barracks, virtually across the command, indicating the need for aggressive action in reducing the number of excess substandard barracks and in bringing the remainder up to standards which would attract soldiers to occupy them. By the end of August 1991, each installation commander had submitted a plan for barracks upgrade to the headquarters, outlining strategies for interim and final renovations, and most had work underway.<sup>70</sup>

#### **Environmental Preservation and Energy Conservation**

General Franks came into command of TRADOC saying that he was an "environmentalist." By this, he meant that he would not be content with efforts designed to meet only minimum requirements in environmental and historic preservation. General Franks's attitude toward the environment amplified programs that were already receiving high visibility in the command. TRADOC's response was already one of accommodating training to the need to preserve threatened and endangered species of wildlife and plants, since virtually all installations provided homes to one or more species. Each installation commander accomplished this by coordinating with state fish and wildlife personnel at the beginning of the training plan process, and by

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69 (1) Briefing Chart ODCSBOS-1, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: BASICS Resources (data as of 31 Dec 91), Doc 1/55. (2) SSHR, ODCSBOS CY 91/1, Office of the TRADOC Engineer, p. 7. (3) HQ TRADOC MACOM Executive Program Review, Detailed Analysis, June 1991, charts 18-19, Doc 1/8.

70. (1) Briefing Chart ODCSBOS-6C, HQ TRADOC Review and Analysis, First Quarter FY92, 21 Feb 92, subj: Enlisted Troop Barracks Meeting Standards (data as of 31 Dec 91), Doc 1/56. (2) (1) Briefing Chart ODCSBOS-6A, HQ TRADOC Review and Analysis, First Quarter FY92, 21 Feb 92, subj: Enlisted Barracks Space Utilization (data as of 31 Sep 91), Doc 1/57. (3) Fact Sheet, ODCSBOS Office of the TRADOC Engineer, 19 Feb 92, subj: Barracks Upgrade Strategy, Doc 1/58

personally signing environmental impact statements. Beyond that, the command required that all environmental notices of violation be resolved expeditiously; the TRADOC goal was ninety days from the date of issuance. Delays in project development and execution, however, had pushed 65 percent of all resolutions above this ceiling by midyear 1991. Along with enhanced management and coordination with federal, state, and local officials, the command sought more community involvement to decrease confrontation and increase cooperation on environmental issues.<sup>71</sup>

TRADOC met its overall energy consumption and savings goals for fiscal year 1991, saving \$6.8 million more than was wasted, even when such variables as weather were factored in. Eleven installations met energy goals; eight did not.<sup>72</sup>

### **Information Management and Automation Issues**

#### **Resources**

As with most other mission elements in the command, the information management area operated with fewer dollars and fewer people by the end of 1991. The Deputy Chief of Staff for Information Management also functioned as Commander, U.S. Army Information Systems Command (USAISC)-TRADOC, and all manpower spaces belonged to USAISC. Funding came from both USAISC and TRADOC, depending upon the mission. Information management organizations across the command ended fiscal year 1991 with 2,106 personnel, 137 fewer than the number of authorizations available. Estimations were that by 30 September 1992, manpower levels would reach about 1,800, including about 300 involved in printing activities which were to be transferred to the Navy as part of a Department of Defense consolidation. Plans jelled in calendar year 1991 for transfer of all information mission area personnel to TRADOC, eliminating the dual command structure. The Chief of Staff of the Army approved the transfer proposal submitted by TRADOC on 10 December 1991, scheduled to become effective at the beginning of fiscal year 1993. Base operations automation funding amounted to about \$28 million in fiscal year 1991, not counting \$402,000 given for Desert Shield and Desert Storm. This amount was programmed to increase to about \$30 million in fiscal year 1992 and 1993, and then plunge to about \$12 million in fiscal year 1994, recovering very little in outyears. Management personnel were preparing "survival plans" as the year closed, taking into account plans for consolidation of printing in the Department of Defense and data processing installa-

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71. (1) Briefing Charts, ODCSBOS Office of the TRADOC Engineer, 8 May 91 Training Video Teleconference, subj: Endangered Species, Doc 1/59. (2) Briefing Chart ODCSBOS-4B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Environmental Notices of Violation, Doc 1/60. (3) Briefing Chart, ODCSBOS Office of the TRADOC Engineer, TRADOC Chiefs of Staff Conference, 26 Feb 92, subj: Installation Environmental Strategy.

72. Fact Sheet, ODCSBOS Office of the TRADOC Engineer, 5 Feb 92, subj: FY 91 Energy Results and Awards, Doc 1/61.

tions in TRADOC, and implementation of Army-fielded sustaining base information systems (SBIS), both done in response to defense management review directives.<sup>73</sup>

### Initiatives and Issues

Although information mission area initiatives in TRADOC were numerous and ubiquitous, among the most important and dynamic in 1991 were video teleconferencing, transition processing, continued development of one-stop in- and out-processing, increasing use of the command's decision support system network, and implementation of the Army's sustaining base information systems. The command expanded or enhanced video teleconferencing (VTC) capabilities at Forts Monroe and McClellan and extended Fort Lee's service to the Army Logistics Management College at a cost of \$646,000. TRADOC information managers estimated savings in travel funds through use of VTC at nearly \$2 million in fiscal year 1991, with greater cost avoidance anticipated in 1992 based on performance in the first quarter. Usage of VTC facilities exceeded 80 percent at three of fourteen installations with the capability. Cost avoidance possibilities were obvious-- five of eight installations with usage rates below fifty percent still saved more travel money than they spent to maintain VTC facilities.<sup>74</sup>

TRADOC had fielded TRANSLAN, an automated transition processing program, to Fort Dix in 1989 to manage soldier out-processing. The Department of the Army was still in the throes of an approved system at the onset of Desert Storm. TRADOC offered, and DA accepted, fielding of TRANSLAN to tie the Army Personnel Center through the TRADOC Decision Support System to Fort Dix and Fort Jackson, enabling the center to track the outprocessing of 95,000 returning Desert Storm troops.<sup>75</sup>

At the end of 1990, TRADOC Chief of Staff Major General James W. van Loben Sels challenged the Deputy Chief of Staff for Base Operations Support, the Deputy Chief of Staff for Information Management, and the TRADOC Integrated Systems Office to field a one-stop in- and out-processing system for TRADOC installations. The concept provided for a single place, such as a welcome center, which would be tied by an integrated automated network to housing, finance, Army family program, medical, and other work centers involved in bringing a soldier and the soldier's family into the installation's systems with the least possible inconvenience and duplication of effort. Core software, developed at a cost of \$550,000, was undergoing initial testing at Fort

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73. (1) Briefing Charts, ODCSIM, TRADOC Chiefs of Staff Conference, 26 Feb 92, subj: [Information Mission Area], Doc 1/62. (2) SSHR, ODCSIM CY 91/II, pp. 2-4.

74. (1) SSHR, ODCSIM, CY 91/II, p. 5. (2) Briefing Chart, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Video Teleconferencing -- TRADOC VTC Cost Avoidance, Doc 1/63. (3) Briefing Chart, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Video Teleconferencing -- TRADOC VTC Percentage Use, Doc 1/64.

75. Briefing Chart TIS-1, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRANSLAN: Transition Processing History, Doc 1/65.

Monroe by the end of 1991. General Foss directed that the headquarters establish a prototype system at Fort Benning during 1992.<sup>76</sup>

TRADOC led all Army major commands in the development of electronic staffing, largely through the command's Decision Support System. Built around International Business Machine's proprietary Professional Office System (PROFS), TRADOC's electronic mail linked all of the command's installations with many other installations and with the Department of the Army through access to the Defense Data Network (DDN). The number of log-on procedures at Fort Monroe alone grew from almost none in 1983 to nearly one and one half million in 1991, increasing to that number from a million in the last year alone. The number of connections made between PROFS and DDN also grew exponentially in 1990 and 1991, from nearly zero to over 20,000 by midyear. TRADOC worried, however, that the Army's proposed replacement for this system, the Sustaining Base Information Systems (SBIS), would be mandated for use before it was really mature and before its functionality had really been proven equal or superior to the PROFS/DSS. Particularly worrisome were the ties between the decline in manpower and funding for automation and success with SBIS, which seemed optimistic at best. TRADOC did not yet know as the year ended whether funds and manpower for the existing system would run out before the Army's replacement could be fielded, leaving an unacceptable gap in the command's ability to communicate.<sup>77</sup>

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76. (1) Briefing Chart TIS-2, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: One-Stop, Doc 1/66. (2) SSHR, ODCSIM, CY 91/II, p. 5.

77. (1) Briefing Chart TIS-3, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Decision Support System Network (data as of 31 Dec 91), Doc 1/67. (2) Briefing Chart TIS-4, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: SBIS (data as of 31 Dec 91), Doc 1/68.

## Chapter II

### DOCTRINE

The development of doctrine was a principal mission responsibility which TRADOC carried out for the Army. Development work was based on AirLand Battle, the Army's fundamental doctrine since 1982 and published in the basic Army doctrinal field manual FM 100-5, Operations. Balancing offense and defense and firepower and maneuver, AirLand Battle was an initiative-oriented body of ideas that emphasized the tenets of depth, initiative, agility, and synchronization. It was embedded in the generation of doctrinal manuals which TRADOC headquarters and its major subordinate commands and schools produced in the mid and late-1980s and early 1990s. Thus, it was upon the principles of AirLand Battle doctrine that the successful ground offensive of the Gulf War was conducted in February 1991.

Inherently dynamic, military doctrine required constant change in its particulars, as new concepts, weapons, and organizations were developed and as the major influencing factors of the military threat, the international world, and national policy shifted. Such factors not only led to near- and mid-term change in doctrinal principles, tactics, techniques, and procedures, but gave rise to new general concepts for the mid-to-far term view of Army operations. TRADOC's doctrinal responsibility went beyond preparation of the current Army for war to encompass a credible vision of battle in the farther future. An evolutionary approach had in recent years governed that side of the command's doctrinal work. Termed AirLand Battle - Future, or ALB-F, that effort was comprehensive across TRADOC's development missions.

TRADOC developed Army doctrinal field manuals in its schools, major subordinate commands, and headquarters through a writing, review, and approval system described in previous installments of this history.<sup>1</sup> The command developed doctrine in three broad areas: Army doctrine, joint doctrine with the Air Force and other services, and combined doctrine applicable to allied military operations. Army field manuals, joint service manuals, and contributions to bination or alliance documents were the vehicles of this work. A TRADOC Doctrine and Literature Master Plan and a TRADOC Armywide Doctrinal and Training Literature Program guided production. The command coordinated its doctrinal efforts widely through a "CINC-link" with the commanders-in-chief and inter-command staff talks. Doctrine was evaluated through field exercises, the Combat Training Centers, and other means. The evaluation lessons were collected by the TRADOC Center for Army Lessons Learned at Fort Leavenworth and the corresponding Joint Chiefs of Staff element, the Joint Universal Lessons Learned System. At the headquarters, doctrine development was in the hands of Brig. Gen. Timothy J. Grogan, Assistant DCS for Concepts and Doctrine through the year in the Office of the DCS for Concepts, Doctrine, and Development headed by Maj. Gen. Stephen Silvasy, Jr. Brig. Gen. Grogan additionally had headquarters responsibility for TRADOC participation in three small joint agencies: the Air-Land Forces Application

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1. For discussions of the doctrine development system, see TRADOC ACH, CY 89, pp. 81-85, and CY 90, pp. 25-27. (Both FOR OFFICIAL USE ONLY -- Info used is not protected)

Agency and the Army - Air Force Center for Low Intensity Conflict, both at nearby Langley Air Force Base, Va., and the Airlift Concepts and Requirements Agency at Scott Air Force Base, Ill.

The development of Army doctrine in the early 1990s was affected in fundamental ways by the profound change occurring in the Army as the result of the watershed political-strategic events of the era noted in the introduction to this history. The shrinkage and retreat of Soviet power from Central Europe and from the world, and the doctrinal lessons and affirmations of the Gulf conflict, broke the doctrinal mold of the Cold War. Those world-changing events, as they affected U.S. defense policies, expanded and extended the Army's doctrinal focus. Thus, as the routine and detail work of doctrine revision went on, the new emerging doctrinal focus decisively influenced the TRADOC development mission. The impact was felt on both of two major projects -- the mid-future work embodied in the ongoing effort to develop the AirLand Battle - Future concept, and more immediately, the war-interrupted revision of FM 100-5, Operations.

### **Foss and the Completion of the AirLand Operations Concept**

#### **Preliminary Work**

Begun in late 1986 by TRADOC commander General Carl E. Vuono, the AirLand Battle - Future project was the main element of a newly-evolutionary TRADOC approach to future development, the "Architecture of the Future." Departing from the previous, more revolutionary futures-approach of the early-to-mid-eighties, ALF-F was to be rigorously evolutionary, growing out of current AirLand Battle doctrine and focused on the near-to-mid future period up to fifteen years ahead. Rounding out the architecture was the mid-to-far future Army 21 project encompassing the 15-30 year period, followed by a Future Concepts element. In the future triad, ALB-F enjoyed a natural priority, and significant work by planners at the Combined Arms Center under headquarters guidance, proceeding at accelerating pace during 1987-1990, had eventuated in an ALB-F concept strongly shaped by the new strategic situation and its implications. That concept was closely and intensively examined by the TRADOC commander, General Foss, and his subordinate commanders and commandants in a series of scenarios, meetings, and map exercises in the course of 1990.<sup>2</sup>

Briefed by General Foss to the Chief of Staff of the Army, General Vuono, on 20 December 1990, the AirLand Battle - Future concept envisaged the next stage of land warfare as a battlefield on which U.S. forces would have the capability to know where the significant enemy forces were almost all the time. U.S. power would engage those forces at long range with very accurate and lethal weapons. Oriented to the enemy force and not to holding terrain, the concept was designed to rapidly

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2. For an account of TRADOC's "futures" work, see TRADOC annual history installments since FY 1980. For development of the Architecture of the Future and ALB-F, see TRADOC Hist R 84-86, pp. 89-98; TRADOC AHR, CY 87, pp. 83-89, (Both SECRET -- Info used is UNCLASSIFIED); TRADOC AHR, CY 88, pp. 71-73; TRADOC ACHs, CY 89, pp. 32-40, and CY 90, pp. 27-36. (All FOR OFFICIAL USE ONLY -- Info used is not protected)

gain and hold the initiative. Not long-range fires and strikes alone, but maneuver warfare played prominently.

The hallmark of the concept was a four-phase structure. Detection, primarily achieved by sensors but backed up by cavalry units was the first step. It permitted establishing the conditions for decisive operations by long-range fires and aviation. Commitment of division forces to decisive operations was the third step. Dispersal and reconstitution filled out the cycle. In the battle, the battalions and brigades fought; the divisions, as tactical headquarters, directed the maneuver fight and battle; the corps found the enemy, controlled the long-range fires, and allocated the maneuver and fire support elements. The division became "unweighted" logistically to enhance the overall agility of the force. Scenario work and map exercises affirmed the tenets of the concept, which was strongly rooted in AirLand Battle principles but oriented to the expectation of the more open battlefield. That battlefield was also viewed as far deeper in dimension, owing to late-1980s generational breakthroughs in weaponry such as the Joint Surveillance Target Attack Radar System and the Army Tactical Missile System. Planners saw in the concept worldwide application -- germane both to the more open European battlefield theorized in the wake of the Warsaw Pact collapse, and to the whole contingency world. Along with the Army's own role, Army doctrine, TRADOC planners believed, was moving to encompass the strategic realm beyond the tactical and operational levels of war.

The Army Chief of Staff's reaction to the emerging ALB-F concept in December 1990 was positive. Accepting the broad four-stage outline, he directed more work be done on power projection, deployment, combined arms operations, joint operations, and logistics. General Vuono also wanted a clear delineation of the specifics of evolution, AirLand Battle to ALB-F, and wider briefing of the concept to the commanders-in-chief and the other services, as work continued in 1991.

Late in 1990 doctrinal planners at TRADOC headquarters, wrestling with the way the concept joined the operational to the strategic realm, as well as with the question of how strategy, operations, and tactics applied across the full operational continuum of war, conflict, and peacetime competition, had proposed to planners at the Combined Arms Center an alternative approach for consideration. This was a conceptual view of the Army that would serve as an overarching conceptual guide for future development and would focus on the full range of the Army's strategic missions. This perspective suggested a broad umbrella concept for the 1990s, to which a warfighting subconcept, and other subconcepts, could be attached. A further version followed in February 1991. An additional problem of the ALB-F concept as it stood at the close of 1990 was that it did not adequately deal with low intensity conflict.<sup>3</sup>

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3 (1) TRADOC ACH, CY 90, pp. 32-36. (FOR OFFICIAL USE ONLY -- Info used is UNCLASSIFIED) See this source, pp. 27-36, for an account of the extensive ALB-F work of 1990. (2) Paper, Trends and Implications for the U.S. Army's Future AirLand Battle, Working Draft, 1 Feb 91, HQ TRADOC, Doc II/1. (3) Bfg, Maj Gen Stephen Silvasy, Jr., HQ TRADOC, 7 Feb 91. (4) MFR ATMH, OCH, John L. Romjue, 21 Mar 91, subj: Recent ALB-F Developments.



## Final Work on the Concept

AirLand Battle - Future workshops and map exercises continued at Fort Leavenworth through the first half of 1991, with TRADOC commanders and commandants attending and supported by the TRADOC Analysis Command. Those meetings focused on heavy division design and on such ALB-F organizational ramifications as anticipatory real-time logistics and on the combined arms brigade and its integration of combat, combat support, and combat service support. Emphasis was on the operational level of war and on unit action in joint and combined contexts. The meetings enabled General Foss and his commanders to clarify and work out organizational, materiel, and doctrinal implications of the new concept which would succeed AirLand Battle. The interconnected but discrete three-battle idea of current doctrine -- close, deep and rear -- for example, would give way to a single extended battle in ALB-F. Emphasized too was the commander's constant need to set the conditions for decisive operations. Even as the Army was in the grip of the high-intensity experience of Desert Storm, Foss cautioned planners not to lose sight of the whole operational continuum to which doctrine applied. They should not focus uniquely on what might occur doctrinally only 20 percent of the time.

The ALB-F meetings were significant for the organization design issues they analyzed in the now more open conditions of battle posed. Cavalry organization issues were prominent, as was the question of the need for a field army, a long-absent "echelon above corps" in Army force design with all its joint and combined ramifications. Significantly gaining ground in the workshop deliberations was the emergence of the brigade as a semi-autonomous organization which could function on the linear and nonlinear battlefield. Integration of combat, combat support, and combat service support would occur in the brigade, not as currently, in the division. Like a "no-huddle offense" in football, command and control had to be implemented quickly and on the move.<sup>4</sup>

To introduce AirLand Battle - Future to a wider audience, TRADOC articles on the new concept appeared in Army magazine in January 1991 and the following month in Military Review. Far from an internal-TRADOC project, ALB-F was extensively reviewed in the Army Staff, by the CINCs and the major Army commands, by U.S. allies, the Air Force Chief of Staff, the Tactical Air Command, and by retired senior Army leaders.<sup>5</sup>

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4. (1) Msgs. Cdr USACAC to distr, 091735Z Feb 91, subj: ALB-F General Officer Workshop Update (Note: two messages identical in subject and date time group), Docs II/2 and II/3. (2) Msg. Cdr USACAC to distr, 081646Z Apr 91, subj: Results of AirLand Battle - Future (ALBF) General Officer Workshop, 19-20 Mar 91, Doc II/4. (3) ALB-F general officer workshops convened on 30 January - 1 February, 19-20 March, 1-2 May, and 12-13 June 1991. Action officer workshops preceded these high-level meetings.

5. (1) General John W. Foss, "AirLand Battle - Future," Army, Feb 1991, pp. 21-24, 33-37, Doc II/5. (2) Maj Gen Stephen Silvasy, Jr., "AirLand Battle Future: The Tactical Battlefield," Military Review, pp. 2-12, Doc II/6. (3) Oral History Interview of Maj Gen Stephen Silvasy, Jr., DCSCDD, by John L. Romjue, 19 Sep 91.

A part of the ALB-F effort was a set of doctrine topic papers, under way in early 1991 in the concepts and doctrine office at the headquarters and at the Command and General Staff College. They included initially a paper on the commander's intent, or Auftragstaktik, the need to unleash subordinate commanders within the framework of the intent of the commander's order. Other papers dealt with low intensity conflict doctrinal considerations, special operations forces integration, contingency operations, nonlinear battle, and maneuver warfare.<sup>6</sup>

General Vuono endorsed a go-ahead with the ALB-F concept effort on 11 March. Vuono saw it as the vehicle to properly shape future Army doctrine, much as the first TRADOC 525-5 pamphlet had shaped AirLand Battle ten years earlier. General Vuono noted too the influence he expected Desert Storm to have in the TRADOC force design and Headquarters Department of the Army force structuring decisions that would eventuate.<sup>7</sup>

The writing of AirLand Battle - Future at the Combined Arms Center was in the hands of the Combined Arms Combat Developments Activity Concepts Directorate, which in October 1990 transferred to the CGSC to become the Concepts and Doctrine Directorate in that organization under Col. Steven Kempf.<sup>8</sup> However, in the first part of 1991, the responsibility for publication of the concept, soon to be restyled AirLand Operations, shifted from the CGSC to Headquarters TRADOC. Significant revisions were undertaken, and the concept was staffed to the services. Review by TRADOC and Department of the Army planners in a meeting at Headquarters Combined Arms Command in March led to an increased emphasis in the concept on force projection and operations short of war. In March, when the Chief of Staff of the Army approved it in principle, he directed TRADOC to take steps to see that the implications of emerging national strategy and lessons learned from the Gulf War were incorporated. Formal briefings of AirLand Operations to the major Army commands, unified commands, the Chief of Staff of the Air Force, the Military Airlift Command, the Tactical Air Command, the Marine Corps Combat Development Command, and U.S. allies followed.<sup>9</sup>

### **AirLand Operations**

Preceded by a coordinating draft of 5 April and the final draft issued on 13 June, AirLand Operations was published on 1 August 1991 as TRADOC Pamphlet 525-

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6. OCH notes on Doctrine Videoconference, 26-28 Feb 91.

7. Msg. HQDA [Gen Vuono, CSA] to distr, 111237Z Mar 91, subj: Shaping the Army and AirLand Battle - Future, Doc II/7.

8. MFR ATMH, OCH, 21 Mar 91, subj: ALB-F Update.

9. SSHR, ODCSCDD, CY 91/I, pp. VI-1 to VI-2. (SECRET -- Info used is UNCLASSIFIED)

5.<sup>10</sup> The pamphlet set forth the operational-level overarching, or "umbrella", concept describing how Army forces would operate in the future as a land component of air, land, and sea power in joint, combined, and interagency operations. Co-signed by the TAC commander, it was also a basis for development of joint operational procedures, Army and tactical air forces doctrine, and the Army and Air Force air attack action plan for joint warfighting. The concept drew on both AirLand Battle and on applicable insights on joint and combined warfare from Operations Desert Shield and Desert Storm. Departing from current doctrine, it introduced operations across the full operational continuum of war, conflict, and peacetime competition, and it introduced power projection and decisive advantage as precepts for future military operations.

The new operational concept took full note of the new international situation and its meaning for U.S. policy and Army operations. It described the replacement of the bipolar world of power by a new world order characterized by diverse threats across the gamut from major war to terrorism and drug-trafficking. In the new power situation, the strategic stance of the Army shifted from forward deployment for forward defense supported by reinforcement from the continental United States, to a strategy of power projection principally from Stateside bases supplemented by a smaller forward presence at selected locations abroad. The reorientation placed a premium on deployment at short notice, on versatility to tailor force packages appropriate to the emerging situation, on lethality permitting quick action with minimal casualties, and on expansibility should global war ensue. The concept envisaged all Army action as part of a joint U.S. force and sometimes as an element of a combined command.

The 1991 TRADOC Pam 525-5 described in detail the AirLand Battle umbrella concept as refocused on a strategic Army, one in which new technologies already in use and those emerging promised significant long-range detection and destruction of the enemy. Operations would occur in an operational continuum of both warfighting situations -- war and conflict -- and in operations short of war that included conflict as well as peacetime competition (Appendix E). The concept emphasized the primacy of warfighting within a theater operation plan encompassing air and land operations (Appendix E).

The essentials of AirLand Operations warfighting were joint operations, the importance of initiative, operations on a nonlinear battlefield viewed as a single deep and extended space up to 500 kilometers in depth (Appendix G). The hallmark of AirLand Operations was the cycle noted earlier of detection and preparation, establishing the conditions for decisive operations, decisive operations, and force reconstitution (Appendix H). Of the AirLand Battle tenets, AirLand Operations placed an increased premium on initiative and agility; it increased the depth of the battlefield, and synchronization became both more critical and more complex.

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10. (1) TRADOC Pam 525-5B, AirLand Operations: The Evolution of AirLand Battle for a Strategic Army, Coordinating Draft, 5 Apr 91, Doc II/8; Final Draft, 13 Jun 91, Doc II/9. (2) TRADOC Pam 525-5, AirLand Operations: A Concept for the Evolution of AirLand Battle for the Strategic Army of the 1990s and Beyond, 1 Aug 91, Doc II.10. The publication repeated the number of the significant and influential TRADOC Pam 525-5, The AirLand Battle and Corps 86, 25 Mar 81, which had served as a major basis of the Army's AirLand Battle doctrine first published in 1982.

TRADOC Pam 525-5 also included a concept for operations short of war -- four categories of operations, sometimes overlapping, that included support for insurgency and counterinsurgency; combating terrorism; peacekeeping operations; and contingency operations such as nation assistance, disaster relief, and other activities as well as strikes and raids. Operations short of war, too, was conductable by the four-stage approach earlier described.<sup>11</sup>

Eight enabling concepts were in formulation as subordinate parts of the umbrella of AirLand Operations. TRADOC headquarters assigned the concepts for execution on 10 May 1991, and seven of them were entered in the final draft of TRADOC Pam 525-5 of 13 June. Doctrinal planners at the headquarters were responsible for concepts for force projection, joint operations, and combined operations. The enabling concepts for echelonment (added by General Foss on 12 June), command and control, and nation assistance were to be written by the Combined Arms Command. The Combined Arms Support Command would contribute the concept for logistics, while the Center for Low Intensity Conflict would prepare the enabling concept for interagency operations.

The essential outlines of the enabling concepts were summarized in the 525-5 pamphlet. Work went forward on them during the late part of the year, with effort made to insure their consistency and to coordinate their development with the writing of FM 100-5, Operations, which was resurrected soon after General Franks assumed TRADOC command in August 1991. All eight were programmed to be staffed in December 1991, but all except one were delayed because of emerging concern about points in the umbrella concept in light of the unfolding lessons of the Gulf War. Only one enabling concept, for force projection, was in staffing by the end of the year. Intelligence lessons of Desert Storm led to the addition of a ninth enabling concept, for space operations, proposed by CAC late in 1991.<sup>12</sup>

The implications of AirLand Operations for the Army touched all the development missions. Power projection, doctrine for operations across the operational continuum, joint and combined operations as the norm, the nonlinear battlefield, the primacy of the commander's intent and of initiative at all levels, longer-range intelligence means and fires, the use of space systems -- all were doctrinal points requiring a full working-out. The materiel realm would require development emphasis in range, intelligence, lethality, deployability, logistics, and other points. Other design needs pointed toward logistical "unweighting" of tactical commands, combined arms integration, tailorability within a smaller available force. Training would continue to be based on the precepts of FM 25-100 and would be guided by the Combined Arms Training Strategy discussed elsewhere in this volume, and by full use of the Combat Training

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11. Ibid.

12 (1) Msg. Cdr TRADOC to Cdrs USACAC, USACASCOM, and A-AF CLIC, 101512Z May 91, subj: AirLand Operations Concept Development Plan, Doc II/11. (2) Msg. HQDA to Cdr TRADOC, 131800Z Nov 91, subj: Space as an Enabling Concept, Doc II/12. (3) Msg. Cdr TRADOC to Cdrs USACAC, USACASCOM, and A-AF CLIC, 121540Z Jun 91, subj: "Echelon" Enabling Concept, Doc II/13. (4) SSHRs, ODCSCDD, CY 91/I, p. VI-2, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. VI 2. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

Centers. Leader development would require a new focus on joint operations and on synchronizing and harmonizing all aspects of combat and noncombat operations. Altogether, AirLand Operations was seen to offer a disciplined evolution into the doctrine of the 1990s and beyond.<sup>13</sup>

### **Concept Development**

Besides the major concept effort encompassing AirLand Operations, TRADOC planners participated in a number of other studies and efforts of doctrinal and strategic focus.

#### **Army 21**

Related to the ALB-F and AirLand Operations effort, the Army 21 project was a further part of the Architecture of the Future initiative begun along with ALB-F in 1987. The Army 21 project had in that year started anew, following an earlier version of the study that had been terminated in 1986 when the more evolutionary approach to future development came into planning. The command's focus on ALB-F and the mid-future and the need first to flesh out that concept had precluded subsequent systematic Army 21 work. However, in December 1989, General Foss had signed a charter to serve as its basis, and work was stepped up in 1990. Focused on the period 15-25 years ahead, the project included work on a formal Army 21 regulation to establish a long-term effort to examine trends and their impact on the Army. What planners had in mind was an Army 21 concept they could publish in an updated version every two years. Beginning in the fall of 1990, the headquarters also coordinated the acquisition of trends studies from several Army and federal agencies by way of formulating the new concept.<sup>14</sup>

A major workshop at Fort Monroe on 21-23 May 1991 drew together the trend studies focused on Army 21. Those contributions included a study of global trends from the Army Intelligence and Threat Analysis Center, a long-range forecast of Eastern and Soviet military trends from the Foreign Military Science Office in the CGSC, and studies of scenarios and trends by the RAND Arroyo Center. Also attending were representatives from CAC, CASCUM, Headquarters Department of the Army, the Army War College, the Army Laboratory Command, the U.S. Special Operations Command, and other service long-term planning agencies. The RAND scenarios provided the basic methodology for the May workshop.

Conferees at the May meeting examined four RAND scenarios in the world of 2005-2015 and used these alternative "worlds" to challenge the Army's AirLand Operations concept under the assumption that that concept would have shaped the Army of 2005. The four scenarios posed first, a U.N. world of coalition military action with U.S. Air Force and Navy roles but little U.S. Army contribution; second, a world of power "over-match" in which the United States lacked modern weapons parity; third,

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13. TRADOC Pam 525-5, AirLand Operations, 1 Aug 91, Doc II/10.

14. TRADOC ACH, CY 90, pp. 42-43. (FOR OFFICIAL USE ONLY -- Info used is not protected) See TRADOC annual histories since FY 1980 for accounts of future development work under the AirLand Battle 2000 and Army 21 programs.

a world in which U.S. Army operations were focused mostly in the ecological realm; and fourth, a world containing defensive military capabilities that would negate U.S. technological effectiveness.

All the scenarios appeared to require substantial modification of AirLand Operations or else an entirely new umbrella concept. The scenarios highlighted variously a future need for more low intensity conflict and nation assistance capabilities, more strategic lift, protection of the U.S. edge in military technology, and the enduring validity of joint operations. These exercises, eliciting thought on the implication of the hypothetical future worlds, served as the framework for an initial Army 21 concept, which was staffed out to the conference participants on 24 December 1991.

The draft concept hypothesized the AirLand Operations Army of 2005 as based in that 1991 mid-term concept. It outlined and projected demographic, economic, educational, geopolitical, resource, social, technological, threat, and military science trends. From those trends, the concept theorized the principal domestic and foreign challenges to U.S. interests in the post-2005 period based on a detailed analytical depiction of world regions and powers in that future time. The concept posed the alternative futures already described, together with their ramifications and suggested near-term actions to prepare for the posed eventualities. Army 21 planners were aware that the alternative "worlds" did not encompass all possibilities, but believed the analyses provided important insights into the future shape of the Army and identified near-term technology research and development actions to pursue answers to meet each scenario. Although the December 1991 Army 21 draft concept did not attempt unity in its conclusions, it provided a multiple body of analysis of possible scenarios in the international world of force of the early 21st century.<sup>15</sup>

## Space

Overwatched by a management structure put in place by the Department of the Army in the mid-1980s, the Army Space Program had been prompted by the Strategic Defense Initiative (SDI) announcement by President Ronald Reagan in March 1983. For the Army, the SDI and the "high frontier" posed an unknown potentiality for the control and influence of land combat. Integrated space activities within TRADOC dated from the mid-1980s and were, after 1987, centered in an Army Space Institute at the Combined Arms Center. The new space efforts complemented Army work long under way to enhance communications, navigation, weather prediction, and mapping. However, congressional scaling-back of SDI support in the late 1980s, together with reduction of defense expenditures overall as the Soviet threat diminished, placed Army space efforts in a secondary priority as measured against more urgent needs. In that general budgetary climate, the performance of the multi-service Global Positioning

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15 (1) Memo ATCD-P, Maj John Gordon IV to distr, 4 Jun 91, subj: Army 21 Workshop Output, Doc II/14. (2) Memo ATCD-P, Maj James A. Bowden to Maj Gordon, 30 May 91, subj: General Observations, Army 21 Workshop, Doc II/15. (3) Briefing, ODCSCDD, to Army 21 Workshop, 21-23 May 91, subj: Army 21, Doc II/16. Memo ATCD-P, Col William T. McCauley to distr, 24 Dec 91, subj: Army 21 Initial Draft, w/encl, Doc II/17. (5) SSHRs, ODCSCDD, CY 91/I, p. VI-1, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. VI-1. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

System, which charted exact locations of U.S. Army units in the trackless Southwest Asia desert in the Gulf War of January-February 1991, was a reminder of the high payoff that Army investments in space could engender.<sup>16</sup>

Lessons learned during Operation Desert Storm underscored the policy that the Army's role in space had to be focused on support of the tactical ground forces. On 12 April 1991, the Department of the Army announced a series of meetings to discuss the Army's future direction in space. Plans were set to work through three agencies during the course of 1991 -- the Army Space Working Group, a general officer steering committee, and the Army Space Council.<sup>17</sup>

Significant space-related developments followed within TRADOC. In early September, the headquarters proposed to the Army Space Council the rewriting of the current Army Space Master Plan as an Army Long-Range Plan for Space. On 13 September, Headquarters Department of the Army assigned TRADOC to accomplish that aim by January 1992. With its AirLand Operations concept in publication, TRADOC told CAC, on 21 September, to review the 1987 Army Operational Concept for Space Operations, TRADOC Pam 525-61, for its currency with the new umbrella concept, and the Army Space Institute began that procedure. TRADOC convened a conference at Fort Monroe during 18-21 November to set development of the long-range plan in motion. The meeting focused on developing a set of space goals for the Army, identifying a set of modernization imperatives, and outlining the needed requirements. TRADOC assigned the long-range plan to CAC, with a coordinating draft scheduled for Army-wide staffing in early 1992. As that work proceeded, CAC replied to Headquarters TRADOC on 21 November regarding the operational concept for space operations. CAC recommended its consideration as an additional enabling concept integral with AirLand Operations, as noted earlier.<sup>18</sup>

In other late-year space developments, TRADOC participated in an interservice Space Doctrine Oversight Committee, established in August 1991 and chaired by the U.S. Space Command. During the period, the committee developed basic doctrine to translate space concepts into military concepts and terminology. For the first time, doctrine defined space forces, space systems, and military space operations. The doctrine forged a link between the four space functions of force enhancement, force application, space control, and space support on the one hand, and the new ground of military space operations on the other. Military space operations would include space combat support, space fire support, counter-space operations, and space opera-

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16. For a documented summary of the emergence of the Army space program organizational apparatus following the 1983 SDI announcement, see TRADOC Hist R 84-86, pp. 79-81. (SECRET -- Info used is UNCLASSIFIED)

17. Msg, HQDA to distr, 121801Z Apr 91, subj: Army Space Working Group Meeting.

18. (1) Msg, Cdr TRADOC to Cdr USACAC, 211645Z Sep 91, subj: Concept for Army Space Operations. (2) SSHR, ODCSCDD, CY 91/II, pp. VII-2 to VII-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) Msg, Cdr USACAC to Cdr TRADOC, 211845Z Nov 91, subj: Concept for Army Space Operations, Doc II/18.

tions mission support. A coordinating draft of this joint publication, JP 3-14, Joint Doctrine for Space Operations, was scheduled for completion in April 1992.<sup>19</sup>

### **Fratricide and Combat Identification**

The problem of U.S. Gulf War casualties resulting from misdirected U.S. fire raised serious concerns in the general public, in the Army, and in TRADOC. This problem, a constant in warfare, was emphasized by the high proportion of U.S. combat deaths resulting from "friendly fire" out of the small number of total combat deaths.

Soon after the conclusion of Operation Desert Storm, the Vice Chief of Staff of the Army assigned TRADOC and the Army Materiel Command to lay out a comprehensive Army combat identification program for both the short and long term, one that could be linked to similar work by the other services and U.S. allies. Under Headquarters TRADOC supervision, planners worked to set up a joint services general officer steering committee as a management authority and to establish a task force of all four services to examine the issue. Early in the year, an operational and organizational plan was approved, and the Combined Arms Command updated an existent combat identification action plan.

There followed the formulation by Headquarters TRADOC of a concept for the prevention of fratricide. The concept emphasized an increased capability to maintain situational awareness and to positively identify targeted objects as friendly, neutral, or enemy. Specific measures included a standard vehicle marking system, development of identification friend or foe (IFF) systems for selected vehicles, and the embedding of identification capabilities in developmental rocket and missile systems. The concept was staffed Armywide in June. Following review by a retired senior officers panel in October, TRADOC briefed the concept and action plan to the Chief of Staff of the Army on 27 November. A press release on the subject followed on 12 December. Evaluations of short-term measures including various special lights and thermal tape at the National Training Center and Joint Readiness Training Center were scheduled to follow in early 1992.<sup>20</sup>

### **Nonlethal Operations**

Early in 1991, the headquarters began the development, through its contractor, Military Professional Resources, Inc. (MPRI), of a concept for the employment of nonlethal weapons. The idea was that such a concept could help limit collateral damage and provide alternative options in situations where lethal force was inappropriate.

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19. SSHR, ODCSCDD, CY 91/II, pp. VII-3 to VII-4. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

20. (1) MFR ATMH, OCH, 14 Apr 92, subj: Fratricide. (2) SSHRs, ODCSCDD, CY 91/I, pp. VI-3, XIII-24, XVI-7 to XVI-8, (SECRET -- Info used is UNCLASSIFIED); 91/II, pp. VI-2 and XVI-20. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) Msg, Cdr TRADOC to Cdr USACAC, 210935Z Mar 91, subj: Study on Fratricide. (4) Msg, HQDA to Cdr FORSCOM, 122210Z Nov 91, subj: Combat ID Quick-Fix Devices Evaluation, Doc II/19. (5) Paper, US Army Operations Concept for Combat Identification, HQ TRADOC, n.d. [briefed by HQ TRADOC to CSA 27 Nov 91], Doc II/20.



ate. The TRADOC commander approved the concept statement on 26 July. An initial draft went out for staffing during October-November. Planners tentatively expanded the concept to encompass operations beyond the technological, such as psychological operations and deception. But at the end of the year, plans pointed toward a refocus on the original idea of exploiting new and emerging technologies rather than seeking a comprehensive approach to nonlethal operations that included capabilities already existing.<sup>21</sup>

### **Nuclear Forces Drawdown**

The significant political changes in Eastern Europe prompted a top-to-bottom review by the Army of its nuclear weapons requirements. As a result of that review, the Secretary of Defense decided on changes in the direction of a drawing-down of Army nuclear capabilities. Such changes affected nuclear doctrine, training, organizations, and leader development, as well as materiel, and TRADOC provided requisite data and coordination to Headquarters Department of the Army. Then, 27 September 1991, President Bush announced that all tactical nuclear weapons would be retired -- a decision affecting all the development missions of TRADOC. The headquarters continued its coordinating activities through the close of the year to accommodate the national policy change. TRADOC reviewed the Army Nuclear Drawdown Plan and drafted a TRADOC Nuclear Drawdown Plan to provide detailed guidance for carrying out the department plan within TRADOC. While the future Army would have no nuclear weapons of its own, it remained necessary to continue participation in nuclear fora with the other services to insure that the Army requirements were known and supported.<sup>22</sup>

### **Other Concepts**

Other conceptual work under way at Headquarters TRADOC during 1991 included a paper treating future Army - Air Force operations in accommodation to the new Air Force organizational initiative for composite air wings, and a study of the realm of peacetime engagement in the post-Cold War era. An important study of functional command posts, begun by CAC the previous year, continued in 1991 with incorporation of lessons learned from Operation Desert Storm. Another significant effort, as signed by General Franks to CAC in September 1991, was a study of battle staffs, with an eye to their size reduction to minimum essential wartime needs.<sup>23</sup>

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21. (1) MFR ATMH, OCH, 14 Apr 92, subj: Nonlethal Operations Concept. (2) Concept Statement for Nonlethal Warfare, n.d. [1991], Doc II/21. (3) SSHRs, ODCSCDD, CY 91/I, pp. VI-2 to VI-3, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. VI-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

22. SSHRs, ODCSCDD, CY 91/I, p. VII-1, (SECRET -- Info used is UNCLASSIFIED), CY 91/II, pp. VII-5 to VII-6. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

23. (1) SSHR, ODCSCDD, CY 91/II, pp. V-2, VI-2, VI-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Msg, Cdr USACAC to DA, 131430Z May 91, subj: Functional Command Post (FCP) Program, Doc II/22. (3) Msg, Cdr TRADOC to Cdr USACAC, 302350Z Sep 91, subj: Battle Staff Study/Review, Doc II/23.

### **Franks and the Review of Army Doctrine**

Although the periodic revision of basic Army warfighting doctrine followed from the dynamic nature of the factors affecting warfare, the world-changing events set in motion by the collapse of the Iron Curtain in late 1989 acted to accelerate the process. The previous installment of this history has described the preliminary revision of the Army's doctrinal manual, FM 100-5, Operations during 1990.<sup>24</sup> That effort, managed by the headquarters with the writing task assigned to the School of Advanced Military Studies (SAMS) in the Command and General Staff College, produced detailed chapter outlines as well as initial chapter drafts. However, in early 1991, the preliminary work was interrupted by considerations bearing on Operation Desert Storm, the most significant U.S. combat action since Vietnam and certain to alter doctrinal ideas concerning modern war. As the experience and lessons of the Gulf War were being collected and analysis of them began, the incumbent TRADOC commander, General Foss, focused the command's doctrinal effort on completion of the AirLand Operations concept, as we have seen. That concept would also influence the subsequent development of FM 100-5, which recommenced almost immediately upon General Franks' accession to TRADOC command on 23 August.

The interrupted preliminary FM 100-5 effort laid important groundwork. The 1990 work proceeded from a full appreciation of the strategic and operational ramifications of the fundamentally altered power situation in Europe and the freer U.S. contingency role in a world in which the retreat of Soviet power permitted more open opportunities to respond militarily to regional crises. Doctrinal planners in 1990 had laid down the basic implications of the new world of power that would shape the revived effort. Foremost was the concept of a greater strategic role for the Army along the entire operational continuum from all the categories of peacetime competition to conflict to war. Just as important was the reorientation of the Army to a smaller force primarily projected from North America, with overseas U.S. elements constituting a smaller forward presence rather than the large forward-deployed forces of the Cold War years.

Adapting AirLand Battle doctrine to a nonlinear or more open battlefield, doctrinal planners at Headquarters TRADOC and in SAMS viewed the Army's mission along the operational continuum in dual terms -- to deter war and, should deterrence fail, to fight and win anywhere in the world. Importantly, joint and combined operations loomed larger than before, as did the operational art. Also adapted was the four-part schematic for action developed in the AirLand Battle - Future project earlier noted.<sup>25</sup>

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24 For a documented account of the preliminary revision of FM 100-5 during 1990, see TRADOC ACH, CY 90, pp. 45-50. (FOR OFFICIAL USE ONLY -- Info used is UNCLASSIFIED) The topic of the development of Army doctrine from the beginning of the effort in 1990 to the expected publication of a new edition of FM 100-5 in 1993 is the subject of a TRADOC Historical Monograph which will provide a comprehensive documented account.

25 Ibid. (FOR OFFICIAL USE ONLY -- Info used is not protected)

## **The Franks Impetus**

Interrupted in early 1991 by the Gulf War, TRADOC's project to revise FM 100-5 resumed in the last half of the year as the command's priority effort. The need to revise U.S. Army doctrine in the face of the retreat of Soviet power from central Europe and elsewhere was both underscored and further changed by the rapid and stunning execution of Operation Desert Storm, a conflict in which observers saw the emerging indications of the advent of post-industrial, technological warfare. Assuming the Army's leadership post in June 1991, the new Army Chief of Staff, General Gordon R. Sullivan communicated his vision of the Army's course in the new era and his conviction that doctrine was the engine of change. General Sullivan made these thoughts known to General Franks on 29 July upon the commander-designee's return to the United States from his VII Corps command assignment. Sullivan saw doctrine and its revision as the key to change, both as a product and as a process by which the Army communicated and informed itself internally.

General Franks' own recent corps-command experience in Desert Storm with the practical execution of Operations doctrine and with a changed dynamics of battle that in many ways had been fought in a new key, seconded the convictions of the Chief of Staff of the Army. Additionally, the new TRADOC commander had earlier reviewed TRADOC's draft AirLand Operations concept. He saw that document, along with the lessons of Desert Shield and Desert Storm, as a basis for the FM 100-5 revision. He envisaged the revision as the first priority among the tasks he would assume as TRADOC commander on 23 August.<sup>26</sup>

General Franks assigned the responsibility for the new FM 100-5 to the director of the School for Advanced Military Studies in the Command and General Staff College, Col. James McDonough, under the supervision of the college deputy commandant, Maj. Gen. William M. Steele and the CAC commander, Lt. Gen. Wilson A. Shoffner. Because General Sullivan wanted the Army's senior commanders well involved in the the Army's doctrinal foundation, General Franks set up a review and discussion mechanism by which issues and problems could be dealt with at high levels in periodic Department of the Army or TRADOC-sponsored meetings. Franks prosecuted his plans and directives through his Deputy Chief of Staff for Concepts, Doctrine, and Development, Maj. Gen. Wesley K. Clark, and Clark's doctrine assistant, Brig. Gen. Timothy J. Grogan.<sup>27</sup>

## **The Precis and Its Discussion**

Because of the necessity to fully accommodate the experience and lessons of the Gulf War into the doctrinal project under way, General Franks chose the vehicle of a short precis, specially prepared by the SAMS writing team in early September as

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26. (1) Oral History Interview, Gen. Frederick M. Franks, Jr., Commander TRADOC, by Dr. Henry O. Malone, Jr., Chief Historian, TRADOC, 2 Jan 92, hereafter Franks Interview, 2 Jan 92, Doc II/24. (2) Ltr. Gen. Gordon R. Sullivan to Lt. Gen. Frederick M. Franks, Jr., 29 Jul 91, Doc II/25.

27. Franks Interview, 2 Jan 92., Doc II/24.

the initial basis.<sup>28</sup> Sent out in initial form to the major Army commanders, it served both as the means to initiate the process and to prepare for the first major discussion forum, the Total Army Analysis meeting convened by the Department of the Army at Fort Belvoir on 19 September. At that meeting, General Franks laid out the precis' three principal groupings of ideas to draw together the concepts of TRADOC Pamphlet 525-5, AirLand Operations, and the experience of the desert war as well as that of Operation Just Cause, the U.S. action of December 1989 - January 1990 which had restored democratic constitutional government to Panama. The idea-groupings advanced were mobilization and deployment; the strategic-operational-tactical scope of doctrine; and the operational continuum -- focuses which served to concentrate the preliminary FM 100-5 work in the fall of 1991.<sup>29</sup>

Revisions to the doctrinal precis resulted from the 19 September meeting, and it was sent out again to the major Army commanders and principals on the Army Staff prior to discussion at a second major forum, the fall Army Commanders' Conference of 16-19 October. Incorporating the discussions of that forum, the precis was reissued in more complete form on 25 October.<sup>30</sup>

The precis emphasized that the U.S. Army was a doctrine-based Army and that the operational idea that served in warfighting applied across the operational continuum. While the revision would build on AirLand Battle doctrine and the new AirLand Operations framework, and would emphasize warfighting at the operational and tactical levels, it would also pertain to the use of forces in whatever role assigned in peace, crisis, or war. Army doctrine, the precis said, had to be tied specifically to the American people and their values and to the American military heritage. As noted, the precis advanced major areas for discussion in mobilization and deployment, the strategic-operational-tactical link, and in joint, combined and interagency operations along the whole continuum. The precis also listed "enabling concepts" as common issues for expansion. These concepts were: the new global security environment, intelligence preparation of the battlefield, theater-level logistics support, the full continuum of operations, and the centrality of retaining the technological edge. In line with General Sullivan's intentions, the process of writing the doctrine of FM 100-5 to set the course for the Army of the 21st century would serve as the engine of change for training, organizational design, leader development, and materiel requirements.<sup>31</sup>

In October 1991, the TRADOC commander and the manual author described the effort, which was now well under way, in articles published that month in Army

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28 This section is based on Franks Interview, 2 Jan 92, Doc II:24.

29 Extract from Memo DACS-ZAA, 20 Sep 91, subj: "TAA 99" Informal SSC, 19 Sep 91, Doc II:26

30 (1) TRADOC Precis, *The Evolution of Doctrine for the Strategic Army of the 1990s and Beyond*, US Army CGSC, 12 Sep 91, Doc II:27. The first precis version of 15 pages was shortened prior to its issuance as a staffing vehicle. (2) Precis, FM 100-5 Operations, Introduction, as of 250730 Oct 91, Doc II:28.

31 Precis, FM 100-5, 25 Oct 91, Doc II:28

magazine and Military Review.<sup>32</sup> General Sullivan's desire to fully involve the senior Army leadership led him to schedule a senior leader warfighting conference to further address the project the following month.

### **The Air Force and Land Doctrine**

Important to the whole doctrine effort was the support of the other services, in particular, the Air Force. The periodic forum of the Joint Projects Review, held on 30 October, provided a general sounding board to this purpose. Attended by the commander of the Tactical Air Command, General Michael Loh, and by Admiral Anthony Lusch and General Walter Boomer, Navy and Marine Corps representatives, this meeting marked general joint-service assent and support for the Army's doctrinal direction as well as a decision by the services to participate in the ongoing revision.

Significant doctrinal issues involving Air Force - Army cooperation were involved. General Franks believed that deep battle, a hallmark of AirLand Battle doctrine, was moving into a new definition from the experience of the Gulf War. From fighting the deep battle in order to shape the main battle, doctrinal currents suggested that battle would take place throughout the depth of the enemy's formations simultaneously. The targeting and attack means of both Army and Air Force had grown greatly in the past half-dozen years and were now a principal focus needing coordination. A further forum, a so-called Army - Air Force "4-star summit" at Fort Leavenworth on 14-15 November, provided further occasion to focus on future bi-service doctrinal issues. Targeting and attacking the enemy in depth required new coordination procedures, as technology began to make possible near-real-time and real-time combat action. Conferees at the mid-November meeting agreed on the TAC-TRADOC exchange as the vehicle toward addressing those problems.<sup>33</sup>

### **The Historical Perspective**

A close look by SAMS at doctrine development by the American Army accompanied the project in the fall of 1991. The SAMS planners presented the results of this study at the Senior Leader Warfighter Conference of 20-21 November at Fort Leavenworth. Their survey extended from the War for American Independence to the present day. The SAMS planners detailed the successive dependence of the Army on the von Steuben "Blue Book" of regulations, on Napoleonic tactics as explicated in the writings of Baron Henri Jomini, and on the privately published manuals brought out by Dennis Hart Mahan, Maj. Gen. Henry Halleck, Maj. Gen. William J. Hardee, and others when no centralized Army organization for doctrine existed. They sketched the influence of Emory Upton and the proliferation of military literature with the coming of the Army service schools.

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32. (1) Gen Frederick M. Franks, " 'After the OPFOR, the Medina Ain't Nothin'!'," Army, Oct 1991, pp. 72-77, Doc Intro/3. (2) Col James R. McDonough, "Building the New FM 100-5, Process and Product," Military Review, Oct 1991, pp. 2-12, Doc II/29.

33. Franks Interview, 2 Jan 92, Doc II/24.

Creation of a War Department staff in the early 20th century had produced the first high-level coordinating agency for creation, development, and control of doctrine, and in 1905, the first field service regulation was published. In their study of the American way of war, the SAMS planners focused particularly on the manual of 1941, remarkable for its precision and clarity. Providing a common understanding of the principles and tactics of war, the series of 20th century field service regulations and field manuals treating operations were important as guides for field operations and as a basis for instruction. But it was with the new international world of post-1945 that national security policy began to weigh in as a factor influencing doctrinal change.

The SAMS planners believed that new doctrine had, most of all, to be relevant to the strategic circumstances for which it was written, achievable fiscally and politically, acceptable to the Army and to the nation, adaptable to external and internal institutional changes, and that the manual had to function as a capstone or keystone holding the doctrinal arch.<sup>34</sup>

### **The Senior Leader Warfighter Conference**

The course ahead was affirmed at the Senior Leader Warfighter Conference held on 20-21 November at Fort Leavenworth. Planners conducted analytical panels on the three Franks emphases, and a general consensus was reached on the scope and content of the manual. The discussions on mobilization and deployment touched a major issue for an Army reorienting itself to a primary United States-based projection force operating on the principle of extremely rapid response over long distances to win quickly and decisively at minimal cost in lives. General Sullivan directed TRADOC at this time to develop a separate manual on mobilization and deployment. The November meeting also produced agreement in the Army leadership for the encompassing approach -- a manual covering the operational continuum. The low intensity conflict end of the spectrum had to be covered, even if the details were put into another manual.

The November senior leader meeting did not resolve the third emphasis: battlefield dynamics and the in-depth fight with its strategic-operational-tactical scope. Difficult issues were involved in a battlefield so radically altered by the advances in intelligence, targeting, and long-range precision fires. Among these were the packaging of forces, command and control, and force versatility, to name a few. General Franks believed that it might not be possible to solve the battlefield dynamics challenge by the time FM 100-5 was republished in 1993. If not, the discussion would go on. Franks believed that the "post-industrial" battlefield, of which "early glimpses" had been discernible in Desert Storm, was something new. The means to test those new dynamics, such as a simulation of the Louisiana Maneuvers of 1940, were a possibility. Even so, the total approach to FM 100-5 was, by late-November, "bounded," the TRADOC commander believed.<sup>35</sup>

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34. Briefing slides, SAMS briefings, 20-21 Nov 91, to Senior Leader Warfighter Conference, Evolution of Doctrine, Doc II/30.

35. Franks Interview, 2 Jan 92, Doc II/24.

General Franks set up a further line of development internally in TRADOC. Following the Senior Leader Warfighting Conference, the TRADOC subordinate commanders and commandants met on 22 November, with subsequent such meetings scheduled as an inner council for FM 100-5. Franks envisaged those meetings occurring every six weeks through the development period.<sup>36</sup>

"Consensus building" for the developing doctrine throughout the Army was an important aspect of the FM 100-5 effort. The TRADOC commander prosecuted that aim through the wide solicitation of comments on the planning and formulation documents as they were developed and through the senior Army and senior TRADOC meetings. At the headquarters, this effort was managed in the Army Doctrine Directorate of Col. Stephen D. Cork by Lt. Col. Bobby McCarter.<sup>37</sup>

On 25 November, General Franks convened at Fort Monroe a meeting of the former TRADOC commanders as an off-line sounding board for the significant development project under way. The former commanders too agreed on the need for revision with the focus on warfighting. This group also discussed the dynamics and depth question and the requirement for a resolution that would allow Army and Air Force components under the joint forces commander to achieve the maximum effects possible on the battlefield. Also figuring in this discussion was the theater missile question, a point of Army vulnerability in Operation Desert Storm.<sup>38</sup>

#### **December Status Report to the Chief of Staff of the Army**

The TRADOC commander reported on the 1991 progress on doctrinal revision to the Army Chief of Staff on 5 December, formally answering General Sullivan's directive letter of 29 July. General Franks noted again the effort's importance as a process as well as an end product. As a process, it was involving the total Army and, in another sense, was continuous as affected by the changing dictates of national security and technological advance. Franks reiterated his belief that an "internalizing" by the Army of the lessons of Just Cause and Desert Storm had to accompany the new ideas of the Army's future concept, AirLand Operations. The precis approach, bridging the gap between the current FM 100-5 and 525-5, furnished the means to start doing that, as TRADOC set about the FM 100-5 revision. The work to date had demonstrated that the U.S. Army was a doctrine-based Army, and it had shown a clear consensus for change in the direction taken: a doctrine dominated by warfighting but also accommodating activities to prevent war or end it on either side of warfighting. The TRADOC commander noted the need still to resolve the "core of our application of force in battles and engagements in the conduct of campaigns," an effort that would require much more discussion.

36 Ibid

37 Memo ATCD A, Brig. Gen. Timothy J. Grogan, ADCSCD to distr. 30 Sep 91, subj. Consensus Building for FM 100-5, Doc II-31.

38 Ibid. Present at the 25 November 1991 meeting of former TRADOC commanders were Generals Donn A. Starry, Glenn K. Otis, William R. Richardson, Carl E. Vuono, and John W. Foss. Not attending were Generals William E. DePuy and Maxwell R. Thurman.

General Franks underlined the need to proceed as described -- to accommodate change on the basis of experience, rather than a leap to the future. Those two approaches, he saw to be in conflict. Franks stated his belief that the Army was not ready for the bold leap of AirLand Operations, published in TRADOC Pam 525-5. He declared his intent to accommodate General Sullivan's guidance "to proceed rapidly with a change to 100-5 which describes all the changes the Army appears ready to accept." At the same time, TRADOC would begin a discussion based less on the deductive leap of 525-5 and more on the Just Cause and Desert Storm experiences. The discussion would be about what might be evolving in the post-industrial era as to how the Army fought battles and engagements and campaigns. He saw as unlikely that the conduct of battle in the post-industrial age could be completed and agreed on by 1993. Such discussion should continue and the results be put to test. In the meantime, Franks seconded General Sullivan's priority for revising doctrine early rather than later, so that it could function as the Army's engine of change in the coming period of unprecedented adjustment. Franks foresaw a further revision of the manual, in the 1997-1998 period, to accomplish the eventual resolution of the battlefield dynamics discussions. At the close of the year, TRADOC planned to submit a manual outline to the Chief of Staff of the Army in January 1992. Planners anticipated completing a manual draft in the spring of 1992, a coordinating draft in the summer, and a final draft by the end of that year.<sup>39</sup>

### **Doctrine Literature Management**

TRADOC wrote, coordinated, and published Army doctrinal literature by procedures governed by a TRADOC Doctrinal Literature Master Plan and a TRADOC Armywide Doctrinal and Training Literature Program. TRADOC Regulations 25-32 and 25-31, respectively. Both regulations had been published in March 1990 and were in force throughout 1991, though amended by a number of changes which will be noted below. The master plan was the policy document for developing doctrinal literature, and included a full listing of Army, multiservice, and combined doctrinal publications, both those in the inventory and those projected -- for which TRADOC had the responsibility. The master plan regulation also included doctrinal literature development standards and a list of doctrinal points of contact in major Army headquarters. The TRADOC Armywide Doctrinal and Training Literature Program was the capstone policy directive. It delineated the program process, spelled out definitions, and presented the Armywide doctrinal and training literature "hierarchy," a graphic depiction of all doctrinal and training literature publications by type. Management of publications in TRADOC was divided by type. The DCS for Concepts, Doctrine, and Development managed field manuals, the DCS for Training managed training circulars, ARTEPs, and soldier training publications. The DCS for Information Management was responsible for selected Department of the Army administrative publications such as pamphlets and posters. The ROTC Cadet Command managed ROTC manuals.<sup>40</sup>

39 Ltr. Gen Frederick M. Franks, Jr. to Gen Gordon R. Sullivan, Chief of Staff, U.S. Army, 5 Dec 91 no subj, Doc II/32

40 TRADOC ACH, CY 90, pp 36-37. (FOR OFFICIAL USE ONLY -- Info used is UNCLASSIFIED)



## Management Changes

Resource reductions and changes in the international world had prompted Headquarters TRADOC, in October 1990, to reexamine doctrine management procedures. From that effort had come several major proposed changes which were considered by headquarters, major subordinate command, and school planners at a doctrine videoconference held during 26-28 February 1991. In summary, those changes were first, to set different priorities for doctrine development -- joint publications and joint TTP (tactics, techniques, and procedures) first, then publications supporting the first units to be equipped with major new systems or supporting new organizations, and finally, the major publications reviewed by the TRADOC commander in the doctrine review and approval group, or DRAG, process. A second change was the institution of "doctrine topic papers" -- to be approved by the commanding general -- as a vehicle for emerging doctrine. A third change was for development of one-time review and approval DRAG meetings for certain manuals and for involvement of the TRADOC commander in the review of maneuver manuals. Other, more major, manuals would continue to be reviewed by the DRAG twice in their development -- at the coordinating draft, and the final draft, stages. Commandants were encouraged to use permanent changes, immediate-action interim changes, or electrical messages to amend field manuals quickly, pending their revision and republication.<sup>41</sup>

Still another proposed change came out of General Foss's directive in October 1990. That was to include tactical standard operating procedures and battle-crew drills in field manuals and technical manuals. This guidance was partially revoked on 23 December 1991. At that time, TRADOC headquarters directed that drills be published, as before, in the ARTEP medium as either separate drill books or as an appendix to an ARTEP mission training plan. A further management issue was TRADOC's desire to change the Department of the Army review requirement for field manuals from 18 months to 24 months, an issue remaining unresolved at the close of 1991.<sup>42</sup> A document containing several of the enumerated changes that were to be made to TRADOC Regulation 25-32, was staffed out to the major subordinate commands and schools. The new TRADOC commander, General Franks, revalidated those FMs selected by his predecessor for the Commanding General, TRADOC DRAG process, but directed that this matter be reexamined in 1992. Still unresolved at the end of the year was policy for inclusion of tactical SOPs in field manuals and the status of doctrine topic papers.<sup>43</sup>

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41. After Action Rept, Doc Confer, 26-28 Feb 91, Doc II/33.

42. (1) Msg, Cdr TRADOC to distr, 231450Z Dec 91, subj: Promulgation of Battle and Crew Drills, Doc II/34. (2) SSHR, ODCSCDD, CY 91/II, p. IX-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) After Action Report, Doctrine Conference, 26-28 Feb 91, Doc II/33.

43. (1) Paper, Proposed Changes to TRADOC Reg 25-32, TRADOC Doctrinal Literature Master Plan, HQ TRADOC, n.d. [1991], Doc II/35. (2) SSHRs, ODCSCDD, CY 91/I, p. IX-3, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. IX-1, IX-4. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

## Concept Management

Revision continued during 1991 of regulations governing the management of the concepts that were developed and written by the headquarters, the major subordinate commands, and the schools. Publication of this document, TRADOC Reg 11-16, Developing and Managing Concepts, however, was deferred following General Franks installation as TRADOC commander, and it was under revision at the close of the year. In the meantime, in advance of expected publication, revisions went out as interim guidance to the field in June. The changes recognized concepts as either one of two types: the umbrella concept (AirLand Operations), and subordinate, operations concepts. The types of operations concepts were: battlefield functional mission area concepts, branch concepts, and system or functional concepts. The interim change, which remained in force despite deferral of the regulation, also delegated approval authority to major subordinate commands for concepts written at the schools. The Commanding General, TRADOC remained the approval authority for concepts written at the major subordinate commands and at Headquarters TRADOC.<sup>44</sup>

In order to insure that concepts in development were closely tied to AirLand Operations, TRADOC headquarters on 25 September directed the major subordinate commands and schools to review all future concepts<sup>45</sup> to that end. Concepts that were in or near the approval and publication stage were to be reviewed for the same purpose, with return to the proponent for revision if necessary. The main things TRADOC wanted incorporated from AirLand Operations into all concepts were: the new appreciation of the threat; force projection; operations across the continuum; the four-stage schematic; the four Army characteristics of versatility, deployability, lethality, and expansibility; and the AirLand Operations emphasis on joint, combined, and integrated operations.<sup>46</sup>

## Concept Reviews

TRADOC concept review boards convened through the year to examine a number of operational concepts. An operational concept for the heavy equipment transporter was approved by General Foss. The board approved operational concepts for the Army Field Feeding System and for Class V Support Utilizing the Palletized Loading System. It again reviewed the operational concept for camouflage and concealment, which the board had reviewed the previous year. Returned for reworking were opera-

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44 (1) MFR ATMH, OCH, 15 Apr 92, subj: TRADOC Reg 11-16, Developing and Managing Concepts. (2) SSHR, ODCSCDD, CY 91, I, p. VI 3 (SECRET -- Info used is UNCLASSIFIED)

45 Excepting concepts published in the TRADOC Pam 525 series.

46 Msg. Cdr TRADOC to distr. 251108Z Sep 91, subj: Implementation of the AirLand Operations (ALO) Umbrella Concept, Doc II/36

tional concepts for Army Map Supply and for "RISTA" (reconnaissance, intelligence, surveillance, and target acquisition).<sup>47</sup>

### **Doctrine Guides and Support Contracts**

Draft guides to doctrine management and writing begun by the Dynamics Research Corp. (DRC) of Andover, Mass. under an Army Research Institute contract in 1989 were revised and completed in February. Following editorial review, the guides were submitted for publication, projected for early 1992 as TRADOC pamphlets. TRADOC Pam 25-35, Desk Guide to Doctrine Management, provided detailed discussions to aid doctrine managers to define doctrine, identify doctrinal issues, develop doctrinal solutions, organize doctrinal improvements, and manage doctrinal production. Case studies from the TRADOC experience were included. TRADOC Pam 25-34, Desk Guide to Doctrine Writing, described the Armywide doctrinal and training literature process and outlined the writer's responsibilities, duties, the steps in the process, designing doctrinal products, writing standards, and technical tips, examples, and sources to guide the writer's actions and see publications through approval to print. The guide emphasized the writer as a critical thinker and problem solver and his need for a full grasp of AirLand Battle doctrine and the history and current state of his topical assignment.

An additional Dynamics Research Corps project under way was a Long-Range Doctrine Improvement Study. In September, doctrine planners redoubled efforts for both the long-range and short-term, focusing on the three broad areas of organization, process, and automation. A future goal was to increase the efficiency of the doctrine development process in ways that would reduce the total number of FMs in use, improve the rate of production, and synchronize Army FM development with the Joint Chiefs of Staff doctrine development schedule.<sup>48</sup> A headquarters proposal to the CGSC in March to implement a doctrine writers course based on DRC prepara-

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47. (1) TRADOC Pam 525-XX, US Army Operational Concept for the Heavy Equipment Transporter (HET), n.d. [1991], Doc II/37. (2) TRADOC Pam 525-XX, US Army Operational Concept for the Army Field Feeding System, Doc II/38. (3) TRADOC Pam, US Army Operational Concept for Camouflage and Concealment, Doc II/39. (4) Final Draft, Interim Operational Concept for Army Map Supply, 28 Jun 91, Doc II/40. (5) TRADOC Pam 525-65, US Army Operational Concept for Class V Support Utilizing the Palletized Loading System, n.d. [1991], Doc II/41. (6) TRADOC Pam, US Army Operational Concept for RISTA, n.d. [1991], Doc II/42. (7) SSHRs, ODCSCDD, CY 91/I, pp. IX-1 to IX-2, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. IX-2 to IX-3, (CONFIDENTIAL -- Info used is UNCLASSIFIED)

48. SSHRs, ODCSCDD, CY 91/I, pp. II-2 to II-3, IX-1, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. IX-1, IX-4 to IX-5, (CONFIDENTIAL -- Info used is UNCLASSIFIED)

tions did not eventuate. The CGSC commandant nonconcurred for reasons of the college's own doctrine writer screening process and time and resource constraints.<sup>49</sup>

Contracts originated in 1989 and 1990 with Military Professional Resources, Inc. (MPRI) continued in force in 1991. The two contracts provided the headquarters and subordinate organizations, respectively, with support in developing concepts, doctrine, scenarios, and other services. Under the contracts, MPRI furnished subject matter experts and arranged for reviews of development projects by "emeritus councils" of senior retired military officers.<sup>50</sup>

## Scenarios

The headquarters continued to provide policy for scenarios in TRADOC, the combat developments tool used to examine concepts, doctrine, forces, and weapons in standard regional or tactical frameworks. A set of five "macro" scenarios for the world regions for which a unified commander-in-chief, or CINC, had responsibility were in development to provide an abbreviated theater context. In a specific theater context were exercised "low resolution" operational and "high resolution" tactical scenarios. TRADOC headquarters oversaw scenario development by the TRADOC Analysis Command (TRAC).

During 1991, the low-resolution scenarios Southwest Asia 3.0 and 4.0 were approved by the TRADOC commander who, however, did not approve the Latin America 1.0 scenario certified by TRAC. That scenario was retained for release and use in portions, upon request. Work continued on the low-resolution Northeast Asia 1.0 and Atlantic Command 1.0 scenarios. The Europe 9.0 scenario had been completed the previous year. Late in 1991, TRADOC undertook a review of all scenarios for validating and application to the Concept Based Requirement System. Planners anticipated revision of several approved scenarios to make them compatible with the new AirLand Operations concept.

TRADOC planners also began revision of the 1989 governing regulation, TRADOC Reg 71-4, TRADOC Scenarios for Combat Developments. A new process by which TRADOC would produce theater resolution scenarios to replace the macro scenarios was scheduled. The new type would respond to TRADOC's increased mission work

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49 (1) TRADOC Pam 25-XX (Revised Draft), Desk Guide to Doctrine Management, and TRADOC Pam 25-XX (Revised Draft), Desk Guide to Doctrine Writing, Andover, Mass., Systems Research Corp., 21 Feb 91, Docs II/43 and II/44. (2) Msg, Comdt USACGSC to Cdr TRADOC, I60400Z Apr 91, subj: Request for Doctrine Writer's Course, Doc II/45. (3) SSHR, ODCSCDD, CY 91/II, p. IX-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

50 (1) TRADOC ACH, CY 90, p. 40. (FOR OFFICIAL USE ONLY -- Info used is UNCLASSIFIED) (2) SSHRs, ODCSCDD, CY 91/I, p. IX-2, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. IX-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

in the area of echelons above corps and was intended to provide a more responsive medium for the production of pertinent corps-and-below study scenarios.<sup>51</sup>

### **Doctrine Literature Production**

During 1991, sixty field manuals were published by TRADOC headquarters, the major subordinate commands, and the schools. Among important FMs published were those for cavalry operations; doctrine for Army special operations forces; combat communications in the division; the division support command of the armored, infantry, and mechanized infantry divisions; quartermaster principles; and signal support in the corps and below. A list of field manuals published during 1991 is at Appendix I.

### **Currents in Army Doctrine**

Headquarters TRADOC managed the decentralized development of field manuals for Army doctrine within the command through directives, guidance, doctrinal review and approval groups, and other means. Sixty Army field manuals were published during the year, as noted earlier. Several other projects in Army doctrine stood out in 1991. Overshadowing all these was the rewriting of the basic manual of Army doctrine, Operations, which was well in progress by the end of the year, as we have seen.<sup>52</sup> Other significant efforts were the completion of a coordinating draft, by the headquarters, of the key manual for echelons above corps, FM 100-7, The Army in Theater Operations, further work on FM 100-16, Support Operations, Echelons Above Corps, and the beginning of work on FM 100-17, Mobilization, Deployment, Redeployment, and Demobilization.

### **The Army in Theater Operations, FM 100-7**

Doctrine writers at the headquarters had completed a preliminary draft of FM 100-7, The Army in Theater Operations, in August 1990, but with the onset of Operation Desert Shield had suspended further development pending a consideration of the forthcoming lessons of the Gulf action.<sup>53</sup> This manual, when completed, would fill a longstanding gap in Army doctrine. The only existing manual for echelons above corps was FM 100-16, Support Operations, Echelons Above Corps, published in 1985 and focused only on the logistics aspect of operations above corps. The doctrinal gap at the above corps echelons was a result of the elimination of those headquarters echelons from the Army structure as an economy measure in the early 1970s.

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51 (1) SSHRs, ODCSCDD, CY 91/I, pp IX-2 to IX-3. (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp IX-3 to IX-4. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) TRADOC ACH, CY 90, p 41 (FOR OFFICIAL USE ONLY -- Info used is not protected) (3) TRADOC Reg 71-4 (Draft), TRADOC Scenarios for Combat Developments, n.d. [1991], Doc II 46

52 For a discussion of doctrinal literature production during 1991, see above, p 71, and below, App I. For a discussion of the development of FM 100-5, Operations, during 1991, see above, pp 65-67.

53 For the background to this project, see TRADOC ACHs, CY 89, pp 85-88; CY 90, pp 50-51. (Both FOR OFFICIAL USE ONLY -- Info used is not protected)

With Operation Desert Storm of early 1991, the numbered field army headquarters above corps again came into its own as Army Forces, Central Command (ARCENT), as indeed did the next level higher, the theater army elements of the theater joint command, U.S. Central Command. In January 1991, General Foss directed resumption of the task, with incorporation of lessons learned from the desert operations.<sup>54</sup>

The TRADOC doctrine writers completed the coordinating draft of FM 100-7 in December 1991 and staffed it Army-wide on 26 December. Compatible with both current Army doctrine and with AirLand Operations, the theater manual linked the Army's Corps Operations (FM 100-15) and other tactical manuals with FM 100-5; FM 100-20, Military Operations in Low Intensity Conflict; and the joint publications. It implemented relevant doctrine from Joint Pub 3.0, Doctrine for Unified and Joint Operations. It addressed the operations of Army forces at echelons above corps and other Army forces employed as part of joint organizations. It provided senior Army commanders an operational-level perspective to link theater strategy to tactics through the use of the operational art. The manual outlined principles and functions for planning and conducting subordinate campaigns and major operations that required the integration of Army combat capabilities and support within a joint, and often combined, framework. It discussed Army operations, including contingency operations across the operational continuum. The manual supplied doctrine for Army service component commanders, Army forces commanders, and other senior Army commanders and staff, in joint or combined situations. It had utility as well for the Army educational institutions, sister service component commanders, and joint and allied commanders.

The manual advanced four postulates as central to understanding the Army in theater operations. The first was the familiar Sullivan maxim that the Army, in its conduct of operations in peacetime competition, conflict, and war, had to be above all versatile, lethal, and expansible. The second postulate was that the Army performed three essential roles: it provided linkages to joint and combined headquarters; it conducted operations to accomplish strategic and operational objectives; and it rendered support to other fighting forces. The third postulate of FM 100-7 was that the operational-level commander operated a dual chain of command -- both operations and support. The fourth main point central to theater operations was that that commander practiced operational art; he functioned at the operational level of campaigns and major operations to accomplish strategic objectives.

Chapters of the theater manual clarified and discussed the functioning and organization of the joint theater, the combined theater, and the Army in the theater of operations. The manual described the operational-level perspective that the Army commander needed to maintain. Manual chapters then dealt with operations planning and execution, the latter based on the operational elements of the Blueprint of the Battlefield -- movement and maneuver, fires, protection, command and control, intelligence, and support. Finally, the manual treated Army component operations in the

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54. For a discussion of echelons above corps in Operations Desert Shield and Desert Storm as consolidated in ARCENT, see Lt Gen John J. Yeosock, "Army Operations in the Gulf Theater," Military Review, Sep 1991, pp. 2-15. (2) SSHR, ODCSCDD, CY 91/1, p III 2 (SECRET -- Info used is UNCLASSIFIED)

three types of action and in contingency operations across the continuum of the three.

Historical examples throughout the text illustrated the levels of action discussed. Operation Golden Pheasant to support Honduran Army units involved in border clashes with communist Nicaragua, for example, was an illustration of an action describable as conflict. U.S. peacekeeping operations in the Sinai illustrated that element of peacetime competition operations. The manual treated in all instances the transition period from one major type of action to another -- from peacetime competition to conflict, for example, if a situation escalated, or conversely, from war in de-escalation to conflict. Appendices provided the organization of the Army in theater operations and formats for campaign plans, and operations plans and orders. Though the manual focused on Army operations at echelons above or outside the corps structure, it assumed one overriding point. That was that in the end Army operations had to support the joint force commander's intent and be tied to and thoroughly coordinated with his concept of operation.<sup>55</sup>

### **Echelons Above Corps Support Operations**

TRADOC's decision in July 1990 to carry through with earlier plans to revise and republish FM 100-16, Support Operations: Echelons Above Corps, had set that project again in motion. Last published in April 1985, FM 100-16 had been under consideration for revision at least since 1988. During 1991, headquarters writers pressed forward with this project, tied doctrinally to The Army in Theater Operations discussed above. With theater operational doctrine taking shape, TRADOC looked toward completion of a preliminary draft of the support volume in 1992.<sup>56</sup>

### **Other Efforts**

Work began late in the year to develop a doctrinal manual on mobilization, deployment, redeployment, and demobilization, as FM 100-17. Also initiated in late 1991 was a plan to begin development of new installation doctrine, replacing AR 3-5, Installations and Organizations.<sup>57</sup>

### **Joint Doctrine**

TRADOC's development of joint doctrine proceeded along two tracks. The first and older track consisted of the development of joint concepts, doctrine and training projects with the U.S. Air Force and U.S. Marine Corps. That effort, managed in the headquarters in the Office of the DCS for Concepts, Doctrine, and Development, included coordination with three interservice agencies. The Assistant DCS for Con-

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55. FM 100-7, The Army in Theater Operations (Coordinating Draft), HQ TRADOC, 24 Dec 91, Doc II/47.

56. SSHRs, ODCSCDD, CY 91/I, p. III-2, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. III-I. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

57. (1) For information on FM 100-17, see above, p. 35. (2) SSHR, ODCSCDD, CY 91/II, pp. III-I, III-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

cepts and Doctrine oversaw and coordinated the doctrinal work of those three organizations: the Air Force - Army Tactical Air Command (TAC) - TRADOC Air-Land Forces Application, or ALFA, Agency established at Langley Air Force Base in 1975; the Air Force Military Airlift Command (MAC) - TRADOC Airlift Concepts and Requirements Agency, or ACRA, established at Scott Air Force Base, Ill., in 1984; and the Army - Air Force Center for Low Intensity Conflict, or CLIC, established in 1986 at Langley Air Force Base. Army oversight of CLIC had transferred from Headquarters TRADOC to the Department of the Army DCS for Operations and Plans in June 1990, with TRADOC, however, maintaining a close relationship with CLIC for assistance in low intensity conflict doctrine matters. From these cooperative ventures came multiservice concepts, papers, training projects and, more rarely, multiservice doctrinal manuals or pamphlets.

Related to the multiservice work was the specific portion of the Joint Chiefs of Staff Joint Publication System which TRADOC carried out for the Army and which led to formal numbered Joint Publications.<sup>58</sup> This second track of joint development dated from the late 1980s following passage of the DOD Reorganization Act of 1986, which had given the Chairman of the Joint Chiefs of Staff the responsibility for developing doctrine for the joint use of the armed forces. JCS Pub 1-01, Joint Publication System, Joint Doctrine and Joint TTP Development Program, established the system and guided its development in the major categories of reference, intelligence, operations, logistics, plans, and command-control-communications systems. The Joint Publication System, or Master Plan, brought together all joint doctrine approved by the four services. It established a systematic hierarchy linking doctrine and procedures under single capstone manuals and included its own implementation plan. TRADOC was assigned to develop many of the joint publications for which the Army had responsibility, and to review others in progress by other Army agencies. The TRADOC major subordinate commands and schools had major roles in drafting the TRADOC-assigned projects, which the headquarters coordinated and reviewed. The ALFA and ACRA organizations also contributed to selected joint publications.<sup>59</sup>

### **Joint Publications**

Over a dozen joint publications were under development in the command during 1991. A commercial contractor, Military Professional Resources, Inc. (MPRI) assisted in several of the joint projects. The year saw the JCS program reach first fruition with the appearance of the final drafts of many of the joint publications. By the close of the year, TRADOC had developed the following joint publications to the point of final publication, test publication, final draft, or initial draft.<sup>60</sup>

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58. For a discussion of joint doctrine development under the JCS system, and the interservice problems experienced, see Col Stephen D. Cork, "Mission: Joint Doctrine Development," TAC-TRADOC ALFA Air Land Bulletin No. 91-1, 30 Apr 91, pp. 16-18, Doc II/48.

59. TRADOC ACH, CY 90, pp. 52-53. (FOR OFFICIAL USE ONLY -- Info used is not protected)

60. SSHRs, ODCSCDD, CY 91/I, pp. V-2 to V-3. (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. V-2 to V-4. (CONFIDENTIAL -- Info used is UNCLASSIFIED)



Proposed Final Publication

JP 3-0 Doctrine for Joint Operations

Proposed Test Publication

JP 3-10 Doctrine for Joint Rear Area Operations

Final Draft

JP 3-01.5 Doctrine for Joint Theater Missile  
Defense  
JP 3-07.1 JTTP for Foreign Internal Defense  
JP 3-09 Doctrine for Joint Fire Support  
JP 3-11 Doctrine for Joint Chemical Operations  
JP 3-15 Joint Doctrine for Barriers, Obstacles,  
and Mine Warfare  
JP 4-01.1 JTTP for Airlift Support to Joint Oper-  
ations  
JP 4-01.3 JTTP for Movement Control  
JP 5-01.5 JTTP for Water Terminal Operations  
JP 5-00.1 JTTP for Joint Campaign Planning

Initial Draft

JP 3-07.2 JTTP for Antiterrorism  
JP 3-07.3 JTTP for Peacekeeping Operations  
JP 3-10.1 JTTP for Base Defense

Joint publications that TRADOC reviewed for other agencies in 1991 included many whose development had reached the proposed final publication or final draft stage. That was true of most of the following listed:<sup>61</sup>

JP 1 Joint Warfare of the U.S. Armed Forces  
JP 2-0 Doctrine for Intelligence Support for  
Joint Operations  
JP 3-01.4 JTTP for Joint Suppression of Enemy Air  
Defense (JSEAD)  
JP 3-02 Joint Doctrine for Amphibious Opera-  
tions  
JP 3-03.2 Joint Precision Interdiction  
JP 3-05.3 Joint Special Operations Operational  
Procedures  
JP 3-05.5 Joint Special Operations Target and  
Mission Planning

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61 SSHRs, ODCSCDD, CY 91/I, pp. V-1 to V-2. (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. V-1 to V-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

JP 3-09.2	JTTP for Radar Operations
JP 3-12	Doctrine for Joint Nuclear Operations
JP 3-12.1	Doctrine for Nonstrategic Nuclear Weapons Employment
JP 3-14	Doctrine for Joint Space Operations
JP 3-50.2	Doctrine for Joint Combat Search and Rescue
JP 3-50.3	Joint Doctrine for Evasion and Recovery
JP 3-51	SIGINT and Electronic Warfare Support Measures for Joint Operations
JP 3-53	Doctrine for Joint Psychological Operations
JP 3-55	Doctrine for Joint Reconnaissance, Sur- veillance, and Target Acquisition
JP 3-55.1	JTTP for Unmanned Aerial Vehicles
JP 3-57	Doctrine for Joint Civil Affairs
JP 4-0	Doctrine for Logistics Support of Joint Operations
JP 4-01.1	JTTP for Airlift Support to Joint Operations
JP 6-0	Doctrine for C3 Systems Support to Joint Operations

Among the joint publications reviewed by TRADOC for other Army agencies was JP 1, Joint Warfare of the U.S. Armed Forces, for which TRADOC coordinated the Army review as well. Development of that publication was greatly accelerated by directive of the Chairman of the JCS, and it was published on 11 November. This significant manual proceeded from the belief, reinforced by the Just Cause and Desert Storm operations, that "the nature of warfare in the modern era... is synonymous with joint warfare." The manual provided the basis for the future joint strategic view in discussions of American military power, the values and fundamentals of joint warfare, and the joint campaign. Related at the warfighting level was JCS Pub 3-0, Doctrine for Unified and Joint Operations, the keystone operational manual completed by Headquarters TRADOC and issued by the Joint Staff as a test publication in January 1990. Headquarters Department of the Army was the lead agency for the further coordination of the important joint publication toward its projected final issuance in 1992. However, TRADOC expended considerable effort on JCS Pub 3-0 during the year, as the primary review authority. During late 1991, the headquarters worked to clarify and sharpen and expand basic concepts of the manual, which paralleled the doctrinal notions of AirLand Operations and the FM 100-5 Operations documents.<sup>62</sup> At the close of the year, JP 3-0 had reached the proposed final publication stage.

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62. (1) Joint Pub 1, Joint Warfare of the US Armed Forces, 11 Nov 91, Doc II/49. Citation from p. 2. (2) SSHR, ODCSCDD, CY 91/II, p. V-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) Msg, HQDA to Cdr TRADOC, 241222Z Jul 91, subj: Revision of Joint Pub 3-0, Doctrine for Unified and Joint Operations, Doc II50.

## **Joint Air Attack**

Cooperative work by TAC and TRADOC in 1989-1990 in the field of joint attack of the enemy by Air Force fighter aircraft and Army attack helicopters had produced a White Paper titled Air Attack on the Modern Battlefield. Approved by the two service chiefs, the White Papers had led further to a five-part Air Attack Action Plan, also signed by the Army and Air Force Chiefs of Staff to synchronize joint air attack combat planning and procedures. The action plan was in partial implementation at the close of 1990. The synchronization planning action and modernization of the Air Force - Army tactical air control system - Army air ground system, or TACS-AAGS, were tested and validated in CENTCOM exercises in July 1990. As implementation continued, a tactics, techniques, and procedures (TTP) manual on tactical air power employment was developed and was in review at the close of 1991. Much of the Air Attack Action Plan was incorporated into the AirLand Operations concept published under joint TAC and TRADOC auspices on 1 August and discussed earlier in this history.<sup>63</sup>

In a related project, planners had revised and in 1990 gained approval of a manual on procedures for joint air attack teams. That update of equipment, terminology, and procedures for a JAAT operation supported the goal of integrated use of helicopter teams, close air support aircraft, and field artillery. The JAAT manual was published in October 1991.<sup>64</sup>

## **Airlift Doctrine Developments**

TRADOC prosecuted a number of important developments through the Airlift Concepts and Requirements Agency (ACRA). A five-service manual providing common procedures for helicopter external air transport, approved by the services in October 1990, was fielded in February 1991. A concept in development by ACRA since 1987 for multiservice employment of the C-17 aircraft was signed by the TRADOC, MAC, and Marine Corps Combat Developments Command commanders in September 1991 and distributed to the field. Procedures to allow the Army and Marine Corps to operate air drop zones using drop zone support teams in place of Air Force combat control teams, had been developed during 1989-1990. Work on the training policy for the teams continued in 1991 in the direction of decentralizing team training to the Army division. ACRA monitored an advanced transport technology mission analysis project undertaken by MAC and other agencies to provide an analytical basis for improving theater airlift in the 21st century. That project was terminated in 1991, but a new set of related future airlift studies was begun with the same general aim.

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63. (1) TRADOC ACHs, CY 89, pp 97-102; CY 90, pp 57-58. (Both FOR OFFICIAL USE ONLY -- Info used is not protected) (2) SSHRs, ODCSCDD, CY 91/I, p. X-3. (SECRET - Info used is UNCLASSIFIED); CY 91/II, p. X-3. (SECRET -- Info used is UNCLASSIFIED)

64. (1) TRADOC ACH, CY 90, pp 58-59. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) SSHRs, ODCSCDD, CY 91/I, p. X-2. (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. X-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) Memo ATCD-ALFA, Lt Col Ken W. Dahl to DCSCDD (ATCD-RO), 21 Jan 92, subj: SSHR.

ACRA completed work begun in 1990 to revise FM 100-27 (AFM 2-50), USA/USAF Doctrine for Joint Airborne and Tactical Airlift Operations. Expanding its scope to include Marine Corps operations, planners staffed and readied the manual revision for 1992 publication. Further work in 1991 on Joint Pub 4-01.1, Airlift Support to Joint Operations, moved that projected manual toward expected issuance as a test publication in June 1992. ACRA planners expected the major new AirLand Operations concept to influence future airlift concepts and introduced it into the Airlift Operations School curriculum.

Mandated by congressional action, a JCS J-8 led study of mobility requirements began, with ACRA participation. Its aim was the identification of the services strategic and tactical mobility requirements, both surface and air. Results were briefed to the Chairman, JCS and the Secretary of Defense in December 1991.<sup>65</sup>

#### **Other Joint Doctrine Matters**

**Air Base Ground Defense.** Another significant joint project was a draft field manual for air base ground defense. Produced in a final draft in September 1990, it had been dispatched directly to the Desert Shield forces. This ALFA-developed manual set forth the general operating procedures for the task, and described the Army and Air Force actions necessary to plan and execute the defense of air bases in rear areas. To be published as FM 19-6 (AF Reg 3-3), Army-Air Force Air Base Ground Defense, the manual was in final pre-publication form by the close of 1991. Meeting at the ALFA agency in August, a joint working group took up the intelligence support and training issues involved in light of experience in Operation Just Cause and in the Philippines. In the joint publication realm, work also proceeded on a joint TTP manual for base defense.<sup>66</sup>

**Joint Communications Concerns.** A number of joint communications projects were under way. A field manual published in 1990 for multiservice procedures for radar beacon operations during combat was accepted as a JCS publication. Planned publication of a pamphlet detailing multiservice communications procedures for the SINCGARS radio continued in deferral in 1991, pending resolution of Air Force issues regarding that service's Have Sync radios. Revision of a 1986 pamphlet on AWACS-Army contingency voice operating procedures to provide doctrine on establishing links between the AWACS system aloft and ground-based air defense units, saw some progress, with a new initial draft in 1991. However, U.S. Marine Corps entry into

65. SSHRs, ODCSCDD, CY 91/I, pp. XI-2, XI-3. (SECRET -- Info used is UNCLASSIFIED). CY 91/II, p. X-2, XI-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

66. (1) TRADOC ACH, CY 90, p. 59. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) SSHRs, ODCSCDD, CY 91/I, p. V-4, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. V-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) For a discussion of air base ground defense issues, see Maj Mark Skattum, USAF, "Army-Air Force Air Base Ground Defense," TAC-TRADOC ALFA Air Land Bulletin No. 90-4, 31 Dec 90, pp. 15-16, Doc II/51.

that program resulted in postponement of its review, to early 1992.<sup>67</sup> Planners in 1991 completed the updating and expansion of a 1981 manual on command, control, and communications countermeasures. Focused on procedures at the joint force level, this multiservice manual was published in May.<sup>68</sup>

In other actions, FM 90-18, Multiservice Procedures for Combat Search and Rescue (CSAR), approved in 1990, was published in May 1991. Also published, in January 1991, was FM 90-22, Multiservice Night and Adverse Weather Combat Operations (Night). Approved and published in 1990, FM 90-15, Multi-Service Procedures for Joint Suppression of Enemy Air Defense, was accepted in 1991 into the JCS publication program and was in final staffing. During the year, the ALFA project to develop a multiservice manual for joint attack on enemy artillery was absorbed by the agency's new battlefield targeting project. That effort was focused on procedures to draw together all means available to the joint task force commander in the counterfire battery, including tactical air, counterbattery fire, deception, electronic warfare, Army aviation, and intelligence systems. Work on an initial draft for joint TTP for campaign planning was brought to focus by a senior officer review group which met in June 1991. Planners briefed and received comments from the headquarters of the several CINCs in this MPRI-organized endeavor.<sup>69</sup>

A new project begun in late 1991 was a four-service effort to develop a concept on the forcible entry into theaters by U.S. forces projected from Stateside or other bases. Also begun, in October 1991, was an ALFA effort to produce a tactics, techniques, and procedures manual to outline the links between the corps and the new composite wings being formed by the Air Force in its major realignment of tactical, strategic, and support functions. An initial draft was forecast for June 1992. ALFA was assigned late in the year to develop a concept of operations for the deployment

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67. SSHR, ODCSCDD, CY 91/II, pp. X-2, X-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

68. (1) FM 90-24/MACP 55-13/TACP 55-19/USFEP 55-14/PACAF 55-19, Multi-Service Procedures for Command, Control, and Communications Countermeasures, May 1991. (2) SSHRs, ODCSCDD, CY 91/I, pp. X-2 to X-3, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. X-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) "Editors News," TAC-TRADOC ALFA Air Land Bulletin, No. 91-2/3, 30 Sep 91, p. 2, Doc II/52.

69. (1) FM 90-18/FMFRP 2-70/MACP 64-3/TACP 50-51/COMDINST M6120.8/USAFEP 50-51/PACAF 50-52, Multi-Service Procedures for Combat Search and Rescue, May 1991. (2) FM 90-22, Multi-Service Night and Adverse Weather Combat Operations (Night), Jan 1991. (3) "Editors Notes," TAC-TRADOC ALFA Air Land Bulletin No. 91-2/3, 30 Sep 91, p. 2, Doc II/52. (4) SSHRs, ODCSCDD, CY 91/I, pp. V-4, X-3, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. V-4, X-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (5) For a discussion of battlefield targeting, see Glen Rother, "Joint Targeting - Let's Get It Together," TAC-TRADOC ALFA Air Land Bulletin No. 91-4, pp. 3-6, Doc II/53.

and employment of the JSTARS, drawing on the experience of its performance in Operation Desert Storm.<sup>70</sup>

TRADOC headquarters planners made increasing use of the Joint Universal Lessons Learned System, or JULIS, by engaging MPRI to extract from that data bank material including Desert Shield and Desert Storm lessons learned applicable to joint doctrine being developed by TRADOC. Joint Projects Review meetings resumed, with the sixteenth such meeting hosted at Fort Monroe on 30 October 1991, the first since February 1990. Its meetings temporarily suspended by the Gulf War, that high level forum included the commanders of TRADOC, FORSCOM, TAC, MAC, MCCDC, and CINCLANTFLT. Preparations began at the headquarters late in the year to assume, in January 1992, a mission of special support to the CINCs and Army component commanders. This program called for focused and responsive support to those commands in all the TRADOC mission areas. ALFA planners hosted in the spring of 1991 a worldwide airspace command and control conference, the first since Operation Desert Storm. Representatives from all services and theaters participated in the joint gathering, which focused on command and control lessons learned in the Gulf War.<sup>71</sup>

### **Combined Doctrine and Developments**

In keeping with the general recognition that future wars of any larger dimension would likely be fought in conjunction with allied forces, TRADOC worked to develop appropriate doctrine and programs. Whereas allied-specific doctrine existed, such as Allied Tactical Publication (ATP)-35(A) for NATO, and US Army field manuals contained individual chapters devoted to combined army or combined joint operations, a keystone combined Army field manual did not exist. That project was therefore a primary doctrinal development effort.

### **Combined Army Operations Doctrine**

The development of FM 100-8, Combined Army Operations, continued through its second full year as the lessons of actual battle experience at that command level were gained in Operations Desert Shield and Desert Storm. Begun in late 1989 by TRADOC headquarters and aided under contract with Military Professional Resources, Inc., the project had produced an approved outline and initial draft of the first chapter in 1990.

Doctrine writers completed the preliminary draft of FM 100-8 in May 1991. The following month, the headquarters sent a doctrine team to Fort Bragg to interview key members of the XVIII Airborne Corps staff on the effect of operational level doctrine on the conduct of the desert operations. Both key U.S. and allied personnel were interviewed in the course of the year to pin down emerging combined army

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70. (1) Memo ATCD-ALFA, Lt Col Ken W. Dahl to ATCD-RO, 21 Jan 92, subj: SSHR. (2) SSHR, ODCSCDD, CY 91/II, p. V-5 (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) "Editors Notes," TAC-TRADOC ALFA Air Land Bulletin 91-4, p. 2, Doc II/53

71 SSHRs, ODCSCDD, CY 91/I, p. X-4, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. V-4, V-5. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

lessons learned. An updated manual draft went to a senior officer review group, which endorsed its doctrinal direction, and at the close of 1991 the preliminary draft was in revision. A final draft was expected by mid-1992.

Combined Army Operations focused on operational level doctrine for the combined army component of a combined force assigned to a theater by a commander-in-chief or an alliance military body. Employing the operation-level operating systems from the published Blueprint of the Battlefield,<sup>72</sup> the manual addressed the entire operational continuum. It treated operations in a developed theater and in a theater where either some or no cooperative agreement existed. Chapters provided an introductory history of combined and coalition operations and a discussion of future strategic theaters, an analysis of combined-coalition structures, leadership of command, peacetime competition, conflict, and war. At each level of war, for both developed and undeveloped theaters, historical discussions lent insight to doctrine.<sup>73</sup>

### **NATO Standardization Programs**

TRADOC carried out numerous efforts within the framework of the NATO alliance to promote standardization and interoperability. The principal fora were the working parties of the Military Agency for Standardization (MAS). The bulk of the work was the review and amendment of existing standardization agreements, or STANAGs, and allied publications, APs, in order to insure that alliance tactics, doctrine, and procedures were up to date. TRADOC also sent representatives to the NATO Army Armaments Group (NAAG). The aim of the NAAG was to propose future equipment standardization. The third NATO area in which TRADOC participated was the standardization fora under the NATO Military Committee, which focused on communications and electronic warfare interoperability issues. With the shrinkage of resources in 1991, some reduction of TRADOC participation in the NATO fora occurred. Delegation sizes were reduced, and participation in low-payoff meetings was eliminated.<sup>74</sup>

In May 1991, the Department of the Army assigned TRADOC to evaluate proposals by Supreme Headquarters Allied Powers Europe (SHAPE) on multinational formations -- a major NATO planning idea in the face of reductions planned by the constituent armies in the post-Cold War. The study addressed the whole range of doctrine, organization, training, leader development, and materiel requirements issues. Carried out by the Combined Arms Command, the study first examined the proposed U.S. contribution to the Belgian Trinational Corps. Results identified the necessity of

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72. The operating systems were: movement and maneuver, fires, command and control, protection, intelligence, and support.

73. (1) TRADOC ACH, CY 90, p. 63. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) SSHRs, ODCSCDD, CY 91/I, p. IV-1, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. IV-1. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) Bfg, FM 100-8, Combined Army Operations, presented by ODCSCDD to TRADOC LO Confer, 28 Aug 91, Doc II/54.

74. This section is based on more detailed reports to be found in SSHRs, ODCSCDD, CY 91/I, pp. IV-1, IV-3 to IV-6, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. IV-1 to IV-4. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

providing a heavy separate brigade and combat service support, and those data were used in negotiations with the Belgians and the Germans. Interviews with senior U.S. and allied military leaders produced insights suggesting the importance of liaison teams and staff augmentation, the commander's personal relationship with all allied and coalition commanders, information sharing, and patching up logistical mismatches. The study continued through the end of the year and was scheduled to focus on the U.S.-German multinational corps, followed by the yet to be determined U.S. Army contribution to the British-led Rapid Reaction Corps of Allied Command Europe.

Convening in Brussels in July in its twenty-first meeting, the Land Forces Tactical Working Party addressed NATO's key doctrinal publication, Allied Tactical Publication (ATP)-35(A), Land Forces Tactical Doctrine. The working party had taken steps the previous year securing the addition of the operational level of war as an annex to that regulation. Further changes were considered, but the participants agreed on the need for a new edition, given the new strategic and doctrinal situation in Europe. Plans were to entertain a U.S. briefing on emerging observations from Desert Storm at the next meeting, scheduled for September 1992. Meanwhile, plans discussed since 1989 went forward toward establishment of a Joint Warfare Doctrine Working Party, an idea accepted during 1991 by the NATO major commands and most member nations.

The Tactical and Logistical Concepts Group, Panex XI of NAAG, held its fortieth and forty-first meetings in Brussels in March and November. TRADOC headed the U.S. delegation. Meetings in 1990 had seen completion of five years' work on the Land Forces 2000 series of functional area concepts. In 1991, with important military changes under way in the NATO structure, the group turned to sponsorship for the NAAG and for the Council of National Armaments Directors, of a NATO Industrial Advisory Group study, "New Technology, Post 2000." An interim report was presented in November, with the final report due for presentation in February 1992. The study focused on a list of promising technologies to meet potential battlefield requirements and on fixing potential areas for cooperative research and development in the future period.

The seventeenth meeting of the Operational Procedures Working Party convened at NATO headquarters in Brussels in April. The forum again took up STANAG No. 2020 on operational situation reports and discussed the issue of its conformity with the new message text format distributed by the United States. Work on a military symbology publication was concluded and set in place for three years, to preclude piecemeal changes in national doctrine in that area. The working party also sought closer ties on command and control developments with other working parties.

The Interservice Tactical Air Working Party held its fourteenth meeting in Brussels in May. The principal work of this Air Force-led forum in 1991 was review of ATP 40(A) on airspace control. There was concern in NATO over low-level air defense and airspace control, and the forum was asked to support ATP 40(A) as a keystone document serving the needs of all the services. A fourth preliminary draft was scheduled to go to the Military Agency for Standardization by the end of the year. The discussion reflected a growing desire in the NATO armies to be involved in airspace control interoperability issues.

The Intelligence Interservice Working Party held its thirty-seventh meeting at NATO headquarters in June. The major 1991 focus was on further development of the



Military Intelligence Data Management Concept, and consensus was achieved. Further actions sought commonality between the German Jaisman automatic data processing system and the U.S. Military Intelligence Integrated Data System - Intelligence Data Base, or MIIDS-IDB. Conferees agreed to defer changes to prisoner of war STANAGs, pending further information from Operation Desert Storm. A further NATO intelligence development, at a U.S.-German meeting at the headquarters of the Defense Intelligence Agency in Washington in October, was U.S. provisional agreement to amend the MIIDS-IDB to reflect agreed standardization rules for nomenclature of equipment. In December, a subcommittee of the working party, the Intelligence Standardization Advisory Committee, met in Ede, the Netherlands to discuss information exchange requirements for prisoner of war and other STANAGs and intelligence data management. In another NATO intelligence matter, conferees meeting at Ashford, England in September revised the order of battle STANAG to accommodate it fully to the combined-joint approach to future warfare.

Several TRADOC Army schools as usual provided U.S. Army representation to other NATO fora during the year. The Ordnance Center chaired the third meeting of the Land Forces Recovery and Repair Working Party in December, where work was completed on two studies on vehicle recovery data and a handbook. The Aviation Center provided the delegation head to the fourteenth meeting of the Helicopter Inter-service Working Party in November, focused on airmobility and its increased significance, with the ongoing downsizing of alliance forces. The Intelligence School, Fort Devens represented the U.S. at the Land Electronic Warfare Working Party meeting in Madrid, Spain in September, where conferees focused on a draft publication on electronic warfare in the land battle. The Combined Arms Command chaired the NATO Allied Data System Interoperability Agency Working Group Three in November, dedicated to harmonizing information exchange requirements, message text formats, and other matters related to systems interoperability. The Combined Arms Support Command chaired the sixteenth meeting of the Land Force Logistic Doctrine Working Party in January, at which substantial progress took place in the revision of Allied Logistics Publication No. 9, Land Forces Logistics Doctrine. The Engineer Center provided the chairman for the eighteenth meeting of the Combat Engineer Working Party in February, which agreed on a STANAG on opposed water crossing procedures and reviewed numerous other STANAGs for their continued validity.

#### **ABCA Programs**

The ABCA (for America Britain-Canada-Australia) Program, which dated back to cooperation between the four World War II allies in the 1940s, was an important cooperative forum for the Army.<sup>75</sup> Within the ABCA apparatus, eighteen quadripartite working groups met at eighteen month intervals in pursuit of separate functional aims in support of the overall functional strategy. As with the NATO meetings, declining resources forced TRADOC to reduce delegations to some ABCA meetings and to bypass others of low payoff.

At the twenty-ninth TEAL (for tactics, equipment, and logistics) meeting of November 1990, parties agreed on the need for more emphasis on the ABCA Program.

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75 For background to the ABCA Program, see TRADOC ACH, CY 90, p. 112 (FOR OFFICIAL USE ONLY -- Info used is UNCLASSIFIED)

As a result, Headquarters Army Materiel Command, as the ABCA executive agent within the United States, inaugurated quarterly in process previews, and in April 1991 TRADOC hosted a video teleconference which elicited update reports by all TRADOC representatives on the working groups. Another outfall of the 1990 TEAL meeting was a plan to hold a mid point meeting in the 18 month TEAL cycle to review progress. That meeting took place on 1 October 1991 and produced several program initiatives.

A first initiative undertaken was a study analyzing declining resources and program commitments. Program heads further determined to reduce TEAL meetings from 5 days to 3 and to focus them at the policy level and only on those problems unsolvable at a lower level. In addition, program development of functional plans of action would continue. Finally, the program would enforce a three level approach to joint involvement: the working group level, the primary and Washington standardization office level, and the TEAL and head of delegation level.

The quadripartite working group for combat developments opened its twenty-ninth meeting in late February 1991 in Middle Wallop, U.K. TRADOC headed the U.S. delegation. This meeting saw concluded the initial chapters of the ABCA Combat Developments Guide 2010. Conferees recognized the need to place more emphasis on joint and army operational level issues, and asked the U.S. delegate to prepare a framework paper for that subject. Late in the year, Headquarters TRADOC completed an ABCA concept paper for evacuating ABCA nationals in emergency conditions. The working group on surveillance, target acquisition, and night observation (STANO) also met in February, at Fort Monroe, with the headquarters serving both as host and U.S. delegation head. Desert Storm issues were briefed and the group refocused its plan of action on STANO doctrinal issues. A special working party for battlefield airspace control produced standard operating procedures and a reference paper, both focused on airspace control in the combat zone. Those products, upon completion of staffing, were proposed for inclusion in Air Standard 45.6B, Tactical Air Procedures Airspace Control in the Combat Zone, and in the forthcoming combat developments guide, respectively. The working group did not envisage further meetings.

As with the NATO program, the major subordinate commands and schools participated in a number of ABCA quadripartite working groups. The Armor Center provided a representative to the group for armor, in October, the Air Defense Artillery Center to the quadripartite meeting for air defense the same month, and the Combined Arms Command to the command and control meeting in December.<sup>76</sup>

### **International Relations**

TRADOC acted as U.S. Army executive agent for bilateral staff talks and carried out bilateral and multilateral contacts with allies and friendly armies around the world by virtue of its Army wide doctrinal combat developments, and training missions. Those activities were exercised from the headquarters, where they were under the supervision of the DCS for Concepts, Doctrine, and Development.

76 SSHRs, ODCSCDD, CY 91 I, pp. IV.2 to IV.3. (SECRET. Info used is UNCLASSIFIED). CY 91 II, pp. IV.4 to IV.5. (CONFIDENTIAL. Info used is UNCLASSIFIED).

During the year, formal army-to-army staff talks took place with nine nations: Germany, the United Kingdom, France, Italy, Spain, Canada, Brazil, Korea, and Japan. Numerous bilateral visits, steering committee meetings, and exchanges and correspondence related to the talks complemented and continued the formal meetings. The Army Materiel Command and other major Army commands participated as warranted by agenda topics. "Subject matter expert" exchanges were also carried out on a less formal arrangement with the armies of several nations, as will be discussed below. TRADOC in addition conducted an annual battlefield conference with the Israeli Defense Forces. The headquarters managed TRADOC participation in two multilateral fora, as earlier detailed: the North Atlantic Treaty Organization (NATO), and the America-Britain-Canada-Australia (ABCA) working groups.<sup>77</sup>

### **Germany**

The most highly developed of all the staff talks conducted by TRADOC were those with the German Army, begun in 1975. Bilateral steering committee meetings accompanied and supported the annual major talks. A network of TRADOC liaison officers at the German General Army Office in Cologne and at twelve school branches located in Germany further supported the exchange. The German-U.S. exchange was diverse but focused on central issues of U.S., German, and NATO doctrine. The extent of common interests was comprehensive, a measure of the closeness of the key U.S.-German relationship.

Bearing on and influencing the discussions were the major political-strategic changes in Europe of 1989-1991 -- the force reductions set in motion by the Conventional Forces Europe Treaty of November 1990, the collapse of the Warsaw Pact and the demise of communism, and the reunification of Germany in October 1990. Although the Soviet Army (soon to come under control of the constituent states of the former Soviet Union) remained the strongest army in Europe in 1991, the strategic picture for both allies was fundamentally altered. The waging of the Gulf War by the United States and its U.N. allies in early 1991 was an augury of the changed relationship developing which, if as close as before, indicated the diffusion of U.S. concerns to the wider strategic world. At the same time, the reunified Germany also faced a new strategic situation as a newly-consolidating Western power with evident economic and political roles to play in both Western and Eastern Europe.

Supported by a steering committee meeting on the eve of the talks, the German-U.S. staff talks convened during 15-18 April at Fort Rucker. General Foss headed the U.S. delegation. Lt. Gen. Ernst Klaffus, the Chief of the German Army Office, led the German delegation. The 1991 talks addressed a wide range of topics developed by the two sides through the steering committee since the May 1990 talks in Munich, Germany.

On the question of multilateral forces in NATO, the two sides agreed on the necessity of a force geared to operational-level maneuver and capable of task organization, rather than a fixed structure. Agreement was reached on harmonizing, to the extent possible and at high pay-off points, the two sides' future operational concepts and the new drafts of the two armies' key operations manuals, HDV 100/100 and FM

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77. For a discussion of the NATO and ABCA programs, see above, pp. 85-87.

100-5. The two parties briefed their concepts of the military future: the U.S. Army as a strategic force primarily protectable from North American bases, and the German Army as based on the recently approved "Structure 5." Primary changes in the making were the merger of the German Field and Territorial Armies, transition from a standing force to a training and mobilization army, a limited number of fully-manned maneuver brigades, and employment along task force principles. U.S. Army plans to concentrate combat service support in future operations at the brigade and corps were well received, and the two sides agreed to coordinate future logistics concepts.

Cooperation through the binational army armaments working group continued, focused on several projects emphasized by the Chief of Staff of the Army. Those projects included a unimodular charge propellant for 155-mm. howitzers, the planned fielding in the summer of 1991 of a device to make the two armies' combat net radios interoperable, plans for communications interface between the U.S. and German forward area air defense command and control systems, cooperation toward the goal of common main armament for the U.S. future infantry fighting vehicle and the German Marder 2 vehicle, and agreement on simulation areas of standardization. Not all projects moved forward, however, due to program funding cuts on both sides.

In aviation matters, the Germans revealed cessation of plans to integrate army aviation and airborne forces into major formations under a unified plan. Instead, the new structure called for modular and flexible force packages, with heliborne forces in combined arms combat operations a long-term objective. Manuals to explain each other's aviation employment were planned. The highly successful U.S. AH-64 Apache performance in Operation Desert Storm was briefed as confirmation of the criticality of aviation to the future army. The two sides agreed to push the ongoing extensive leadership training exchanges as a higher priority. Cooperation continued in German tests of tank crews. The Germans briefed their experience with and plans for the remnant elements of the former East German army units in conversion. The German Army expected to retain little of the eastern heavy equipment, excepting the BMP-1 vehicle.

The Fort Rucker meeting also included assessments of the radically changed threat. The U.S. side briefed U.S. Army operations in the Gulf War and thanked the Germans for their support. Conferees noted the signing, on 15 April 1991, of the U.S.-German Infantry Future Development Program Charter by the heads of delegation, as well as the signing of an explosive ordnance disposal handbook. Lt. Gen. Klaffus pointed to interoperability in logistics, helicopter forces, support, and command and control as productive courses ahead. General Foss spoke for continuance of the beneficial spirit of the German-U.S. talks, which the rest of NATO regarded as pace-setting, and urged a focus on the achievable. In accordance with a 1990 agreement, the steering committee met in December 1991 at Idar-Oberstein, Germany at the midway point to the next talks, set for May 1992 in Sonthofen, Germany.<sup>78</sup>

78 (1) Paper, GE/US Army Pre-Staff and Staff Talks, 15-18 Apr 91, Fort Rucker, Ala., HQ TRADOC IAPD, n.d. [1991], Doc II/55. (2) Memo ATCD YN, IAPD to DCSCDD, n.d. [1991], subj Ger/US Army Steering Committee (GE/US SC) Minutes, 914 Dec 91, Doc II/56. See this document for a record of the steering committee deliberations.

## United Kingdom

Active since 1978, the British-U.S. exchange dealt with a wide range of mutual concerns. Preceded by a steering committee meeting at Fort Monroe in May 1991, Staff Talks XXIII were held between the armies of the United Kingdom and the United States at Fort Benning from 6-11 October on the theme of interoperability within a coalition. As customary, the forum included both the staff and training talks, held in tandem. The delegation heads were Maj. Gen. Wesley K. Clark, the DCS for Concepts, Doctrine, and Development, for the staff talks proper, and Maj. Gen. Dennis Malcor, the DSC for Training for the training talks. Maj. Gen. S.C. Grant, the Director General Army Training represented the British side.

As recent battlefield allies in the Gulf War, the two sides focused on "Operation Desert Storm/Granby" insights, conceptual doctrinal developments, and analysis of interoperability requirements. In addition to briefings, four expert working groups met to focus on interoperability in the areas of C3I (command, control, communications intelligence), intelligence, logistics, and operational fires. The talks were followed by visits by Maj. Gen. Grant to the Infantry School, the National Training Center, the Joint Readiness Training Center, and the Combined Arms Command. Forty-three agreed-to actions resulted from the October 1991 talks. Important among them were agreement to create a procedural matrix for future bilateral use, consideration of the National Training Center as the 1993 staff talks site in conjunction with a British unit rotation, and to review opportunities for training between the armies.

The two sides also reaffirmed the need for closer consultation in doctrinal development. As in other staff talks fora, the U.K.-U.S. delegates were impressed by the increasing need to mesh their command and control and their C3I equipment procedures. Tactical intelligence commonality was another focal issue in the increasingly interdependent world. Interoperability measures were discussed and agreed on toward the achievement of common doctrine and procedures and interoperable command and control software and delivery systems for operational fires. Logistics challenges included interoperable logistics C3I systems, interoperable field commodities delivery systems, and equipment commonality.

Standing working groups -- for the Armored Combat Development Exchange Program, for C3I, for Directed Energy Warfare, and for Engineer were active during the year. Meetings focused on the Gulf War experience and interoperability in materiel development. In 1991, the C3I group was shifted to a quadrilateral forum with Germany and France, holding its first meeting under that arrangement in November.

Both armies regarded coalition operations as a prerequisite for success in future operations. The new military structure of NATO was expected to include multinational formations at corps and in some cases at division level. The shrinkage of the NATO armies as a result of the new strategic situation in Europe also pointed toward increasing interdependence for success at the operational level. Conferees felt that

Operation Desert Storm/Granby highlighted the political imperatives and military exigencies of coalition warfare.<sup>79</sup>

## France

Staff talks with the French Army had begun in 1980 and had progressed to substantive exchanges by the late part of the decade. Although France, a NATO member, had not integrated its forces with the NATO military command, the French Army shared many areas of common interest with the U.S. Army. That fact was borne out by the significant French participation in "Operations Desert Storm Daguet." Steering committee meetings and the work of expert exchanges and working groups supported the annual talks. A network of TRADOC liaison officers at the French Army Headquarters and French War College and at six French Army schools backed up the exchange.

The eighteenth set of French U.S. Army staff talks took place at the French Armor and Cavalry School in Saumur, France during 28-31 May. Brig Gen Piroth, Deputy Chief of Staff for Studies, Plans, and Budget, headed the French delegation. Maj Gen Stephen Silvasy, Jr., the DCS for Concepts, Doctrine, and Development, serving as the U.S. counterpart. Discussion focused on the Gulf War and on weapon and doctrine developments and logistical support on the modern battlefield.

A host of agreed-to actions came out of the 1991 meeting of the well-matured binational exchange. These consisted of both subject matter expert exchanges and queries for further information and requests for support. Expert exchanges were continued or initiated for the new generation of combat net radios and other radio equipment, mine countermine warfare, the two armies' MANPRINT systems, the new quadrilateral C3I working group, nuclear biological chemical matters, and in concert with the XVIII Airborne Corps and the French Force d'Action Rapide, Desert Storm lessons learned.

Other important mutual actions which pointed toward further work included interoperability efforts for the JSTARS and Horizon systems for both U.S. and French ground station modules; French interest in ongoing U.S. unmanned aerial vehicle developments; U.S. joint air attack team compatibility with current NATO STANAGs; Central Army Group tests of the Rita mobile subscriber equipment and Ptarmigan communications systems; U.S. commercial transportation capabilities; French interest in a personnel support system to support an all-volunteer army; and the French development of a global wargaming and needs assessment simulation entitled Project Carneade.

Subject matter exchanges held in accordance with staff talks agreements during the year related to the MANPRINT system, airmobility, command control communications

79 (1) SSHRs ODCSCDD CY 91 I, pp XVIII 6 to XVIII 7. (SECRET Info used is UNCLASSIFIED). CY 91 II, UK Program Input Jul-Dec 91. (CONFIDENTIAL Info used is UNCLASSIFIED) (2) Memo ATCD YN, Brig Gen Wesley K. Clark, DCSCDD to distr, 5 Nov 91, subj: Memo of the United Kingdom/United States Army Staff and Training Talks (UK/US STT) XXIII, 6-11 Oct 91, Doc II, 57.

intelligence, and the XVIII Airborne Corps - French Rapid Reaction Force exchange. A steering committee meeting at Fort Monroe in November paved the way for the next annual talks, scheduled for Fort Gordon in May 1992.<sup>80</sup>

## Italy

Begun in 1985, the Italian-U.S. Army staff talks convened in their seventh session at Italian Army Headquarters in Rome during 3-7 June, preceded by a steering committee meeting in Rome in January. Brig. Gen. Nicola Vozza, Italian Army Deputy Chief of Staff for Logistics, headed the host delegation, a shift in Italian sponsorship of the talks from the DCS for Operations. Brig. Gen. James Brickman, the TRADOC Assistant DCS for Developments, led the U.S. side. Dealing with matters raised during the 1990 talks, the conference registered action complete on a planned explosive ordnance disposal interoperability handbook, to be pursued through liaison officers; and on the Italians' request for information on U.N. peacekeeping operations and on women soldier policies. Plans in 1990 to establish a C3I working group had led to an ongoing expert exchange, with meetings held in November 1990 and May 1991. Plans in 1990 for an Italian Army visit to view the Battle Command Training Program at the Combined Arms Command, as well as the National Training Center, had not yet been realized, and the Italian side requested that that visit be planned with Headquarters TRADOC and Fort Knox added to the itinerary. U.S. briefers presented the U.S. Army concept of simulation-supported training and the Family of Simulations, or FAMSIM, as background toward that eventuality. Prompted by another 1990 action, the two sides convened an expert exchange which produced an ammunition interoperability handbook, formally approved with signatures on 5 June. A previously scheduled air-ground exercise expert exchange, which had been postponed because of the Gulf conflict and budgeting reasons, was cancelled. In a final 1990 action, the two sides agreed to continued U.S. participation in aviation drills, with Italian interest in air-to-air combat operations to be served in a subject matter expert exchange.

At the 1991 talks, the Italian delegation briefed on the changing international situation and its impact on the Italian Army, the history and tactical employment of engineer units, logistics structures and logistics support for allied reinforcements, and nuclear-biological-chemical training. These various briefings yielded interesting information for the exchange. Under consideration was Italy's plan to reduce conscript service from 12 months to 6, an examination of women's military roles, and the reduction of the force to 220,000. Italian force reorganization plans were affected by the uncertainty regarding the NATO future, but current planning suggested up to five brigades available for a multinational force. In discussions of nuclear-biological-chemical matters, the U.S. side passed on the Desert Storm lessons learned on protective clothing wear.

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80 (1) SSHRs, ODCSCDD, CY 91/I, pp. XVIII.2 to XVIII.3. (SECRET -- Info used is UNCLASSIFIED); CY 91/II, French Program Hist Rept Input, 1 Jul - 31 Dec 91. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Memo. Maj Gen Stephen Silvasy, Jr., to distr, 5 Aug 91, subj. Fr/U.S. Staff Talks (FR/US ST) XVIII Agreed-to-Actions, Doc II/58. (3) Bklt, The French Army, Current Issues, USATRADOC Ln Net France, Sep 1990, Doc II/59.

The U.S. side presented briefings on AirLand Operations and on the emerging lessons of Desert Storm and implications for command and control coordination in coalition warfare. The Italians saw the command and control and logistical implications as significant and needing further discussion. The U.S. agreed to keep the Italian Army fully informed on AirLand Operations developments. U.S. briefers also gave presentations on reconnaissance, surveillance, and counterreconnaissance and on U.S. Army initial entry training. Reciprocal briefings were presented on designing a multinational force. That exchange revealed full Italian support for the SHAPE multinational force concept and took note of U.S. concerns regarding adequate liaison links at the lowest possible level. Reciprocal briefings on Army-Air Force cooperation focused on the recent U.S. advances and on the principal interservice problem of who selects the target and who controls the airspace.

In the new post-Cold War climate, the two sides planned to reduce staff talks frequency to a bi-annual basis, with the next round set for June 1993. Conferees agreed on the need for additional subject matter expert exchanges to fill the void.<sup>81</sup>

### Spain

The newest of the staff talks with European allies, the annual talks with the Spanish Army had begun in 1987, with the structure of the formal exchange emerging in 1988-1989. Preceded by a steering committee meeting in July, the fifth round of the Spain-U.S. Army Staff Talks took place at Spanish Army headquarters in Madrid, Spain during 4-9 November 1991. Brig. Gen. Alfonso Pardo de Santayana y Coloma, Deputy Chief of Staff for Plans and Organization Division of the Spanish Army General Staff led the host delegation. Brig. Gen. Timothy J. Grogan, Assistant DCS for Concepts and Doctrine, headed the U.S. side. The U.S. visit included tours of exercises and activities of the Spanish Operations Group I at Colmenar Viejo and a division support command.

As before, the developing Spain-U.S. talks featured briefings at plenary sessions by each side tied to the activities of working groups which also met during the occasion. Steering committee review sessions were conducted to establish the status of ongoing actions and to plan future exchanges. The Spanish delegation presented briefings on Spanish Army participation in NATO, risk perception, multinational force integration capabilities, Spanish Army experience in the Sahara, and Spanish noncommissioned officers. U.S. delegates briefed on AirLand Operations; multinational forces in the NATO framework; air assault operations and the role of Special Forces in the Gulf War; and fire support in the future battle. Working groups which met during the 1991 Madrid talks explored in detail AirLand Operations and the Gulf and Sahara operations.

The two sides had agreed in 1990 to implement thirty-two exchange visits during 1991. Those included exchanges by general officers, branch officers, exercise observers, staff information visits, academy students, military competition teams, and subject matter experts. Many of the exchanges were scheduled with U.S. Army Europe

81 (1) MFR ATCD-YN, Erika L. Mitchell, Ital Prog Mgr, 16 Oct 91, subj: Italy/United States Army Staff Talks VII (IT/US ST VII), 3-7 June 1991, Doc II/60. (2) SSHR, ODCSCDD, CY 91/I, p. XVIII-4. (SECRET -- Info used is UNCLASSIFIED)



(USAREUR) units, and the 1990 planning had additionally provided for a Spanish Army battalion to deploy to field training exercises in USAREUR. The training deployment was successfully carried out between 25 October and 4 November, but the advent of Operations Desert Shield and Desert Storm, together with budgetary cuts acted to cancel over half the planned exchange visits. However, subject matter exchanges focused on logistics automation and AirLand Battle - Future, and a number of the planned branch-officer, exercise, and information visits were carried through in 1991. For 1992, conferees planned a similar schedule, which was to include the visit of a U.S. mechanized infantry battalion to participate in a Spanish brigade exercise. The two sides additionally agreed in principle to hold an expert exchange on doctrine formulation.

Although reduced by budget cuts in 1991, the Spanish-U.S. talks provided an array of means by which the two armies were progressing to a mutual understanding on each side of the other's structure, development, and direction. Plans were made for the next round of talks in November 1992.<sup>82</sup>

### **Canada**

The Canadian U.S. talks complemented Canada's many defense links to the United States through NATO and its development organizations and the ABCA forum. Following earlier doctrinal exchanges, formal staff talks had begun in 1986. Concern with the defense of North America, the NATO mission, and a traditional participation by Canada in global peacekeeping operations gave the two armies many common outlooks and mutual interests.

The sixth round of this exchange took place at the Canadian Land Forces Command and Staff College in Kingston, Ontario between 16-18 September, preceded by a steering committee meeting in March. Maj. Gen. Paul Addy, Chief, Land Doctrine and Operations, National Defense Headquarters headed the Canadian delegation. Brig. Gen. Grogan led the U.S. party, which made presentations on AirLand Operations and its combined arms and logistics implications, the family of simulators, and the requirements for a future armored gun system. The U.S. side also briefed on the U.S. Army total force concept and the Battle Command Training Program, two topics which drew a high level of Canadian interest.

The Canadians provided an overview of the Canadian Land Forces in current transition to a smaller restructured organization. Also briefed by the Canadians were an update of their current combat developments process, an overview of women in the combat arms, the Canadian directed energy warfare program, and soldier outfitting. The Canadian delegation also briefed on Operation Salon, providing a description of military aid to the civil powers during native unrest in Quebec and Ontario in 1990, which highlighted the command and control, intelligence, and media aspects of the operation and the political-military-police relationships.

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82. (1) Minutes of the Fifth Spain-United States Army Staff Meeting, Madrid, 4-9 November 1991, Department of State Office of Language Services Translating Division, Doc II/61. (2) SSHRs, ODCSCDD, CY 91/I, pp. XVIII-5 to XVIII-6, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, IAPD Input for U.S.-Spain exchange. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

Subject matter expert exchange planning and information requests resulted from the 1991 briefings. Reviewing ongoing and recently completed exchange items, the conferees reported the current staffing of the binational master data exchange agreement annex for electronic warfare correlation and analysis; and distribution of U.S. Army FMs 71-100-1 through 71-100-5, which were being rewritten to incorporate Desert Storm lessons and the AirLand Operations concept. A planned exchange focused on the 21st century army failed to materialize, due to Canadian budget cuts, though that subject remained a prospect for treatment in future staff talks.

Reduction of the schedule of Canada-U.S. staff talks from 12 to approximately 18-month intervals had been agreed on as a budgetary measure at the June 1990 talks. It was affirmed at the September 1991 forum, and the two sides tentatively scheduled the next formal meeting for July 1993 at Fort Leavenworth. For the future, the two parties looked toward a focus on simulations and joint and combined doctrinal interests.<sup>83</sup>

### **Brazil**

In progress since 1984, the Brazil-U.S. staff talks convened in their eighth formal meeting, at Fort Leavenworth, during 13-18 July. Maj. Gen. Paulo Neves de Aquino, Deputy Chief of Staff for Doctrine, Politics, and Strategy in Brazilian Army Headquarters, headed the visiting delegation. Brig. Gen. Grogan led the U.S. side. The 1991 exchange included a visit by air to the Joint Readiness Training Center at Fort Chaffee for briefings and demonstrations, as well as the viewing of a Kansas City Royals baseball game.

The talks in 1991 continued the productive maturing relationship that had led, as a major accomplishment, to the significant establishment of aviation and electronic warfare branches and schools in the Brazilian Army. The meeting at Fort Leavenworth proceeded along several key lines of interest. Expert working group meetings held in conjunction with many of the sessions allowed the deeper exploration of several topics. U.S. presentations on AirLand Operations and Desert Storm elicited considerable Brazilian interest in the roles of the independent brigade and attack helicopters and in "skip echelon" logistics and other subjects. The U.S. information on science and technology support of personnel administration, presented by an Army Research Institute official, revealed Brazilian interest in common topics and problems, including the conscript versus volunteer army and drug screening. The U.S. side also presented briefings on the organization and operations of armor and mechanized infantry, logistics support for the aviation brigade, rear area defense operations, and women in the Army.

The Brazilians gave informative presentations on doctrinal concepts and development for ground forces and on army doctrine development. They revealed keen

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83 (1) MFR, Maj. Gen. P.G. Addy and Brig. Gen. Timothy J. Grogan to distr, Nov 91, subj: Canada/US Army Staff Talks VI, 16-18 Sep 91, Doc II/62. (2) Memo ATCD-YN, Brig. Gen. Timothy J. Grogan, ADCS for Concepts and Doctrine to distr, Feb 92, subj: Canada/U.S. Army Staff Talks (CA/US ST) VI Agreed to Actions, Doc II/63. (3) SSHR, ODCSCDD, CY 91/I, p. XVIII-2. (SECRET -- Info used is UNCLASSIFIED)

interest in the U.S. Army's process for developing joint doctrine and integrating doctrine into training, as they did in the extensive detail of a third general topic briefed -- logistical support organizations and operations. Also presented by the Brazilians were briefings on physical fitness training and fire support in jungle operations.

Further expert exchanges were planned on personnel research and development, automation in support of logistics, and physical fitness. The delegations looked ahead to further topics of Brazilian interest for prospective 1992 discussion. They included U.S. Army logistics structure and doctrine; the theory, architecture, and procedures of C3I from the corps down; the U.S. Army's Army 21 methodology; the use of simulations in staff training; U.S. Army mobilization systems; field artillery, including its command and control; and the equipment development process. U.S. planners continued to see the talks as the cornerstone of the U.S. Army's maturing relationship with the Brazilian Army, and as an excellent forum for identifying significant areas of common interest with potential for cooperative work. Meeting in Brasilia in December, the steering committee scheduled the 1992 talks at that and other Brazilian sites for the coming July.<sup>84</sup>

### **Korea**

Prepared by a steering committee meeting in April 1990 at Fort Monroe, the eighth session of the Republic of Korea - United States staff talks convened at Headquarters TRADOC during 21-25 October 1991. Brig. Gen. Grogan led the U.S. delegation, while Col. Park Jae Kuen, the Deputy Chief of Staff for Doctrine in the Republic of Korea Training and Doctrine Command, the ROKA TRADOC, led the Korean side. The Koreans' visit included an introduction to Atlantic Fleet Headquarters in Norfolk, Va., and a tour of the U.S. Navy guided missile cruiser USS Harry E. Yarnell.

Reporting results of the talks to the Chief of Staff of the Army, the TRADOC commander, General Franks characterized the round as one of the most frank and open to date, with candid questions and answers. The Koreans shared U.S. uncertainty about the future of international relations in the rapidly changing world. They evinced an unwavering conviction that the U.S. presence in Korea should not change substantially as long as North Korea remained a threat. Disruptions to the German economy following that nation's experience with reunification gave the Koreans pause about their own reunification negotiations with North Korea. The Korean side showed some concern about North Korean acquisition of reactive armor equipped tanks. The Korean party also expressed continued interest in the use of simulations and simulators to reduce training costs -- a common interest in many of the 1991 bilateral talks. The Koreans showed keen interest in U.S. doctrinal developments, an indication of the close military relationship.

Briefings by the U.S. side covered significant current initiatives and emphases. These included the Army's strategic and doctrinal reorientation, the updated view of

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84. (1) Memo ATCD-Y, Col Richard P. Guthrie, Dir IAPD to Brig Gen Grogan, 8 Aug 91, subj: Brazil/U.S. Army Staff Talks (BR/US ST) VIII, Doc II/64. (2) SSSR, ODCSCDD, CY 91/II, Hist Rept for Brazilian Program, Jul-Dec 91. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

AirLand Operations, the family of simulations, the distributed training program reducing officers and soldiers time away from their assigned units, combined arms breaching operations, the continuing problems between the two armies in the communications, command and control, and intelligence realm, and the emerging conclusions regarding Operations Desert Shield and Desert Storm.

The Korean briefings included the North Korean threat. A part of that concern was the potential North Korean acquisition of a nuclear capability. Another point of concern was the fact of the apparent lesson drawn by the North Koreans from the Gulf War that a shift to acquisition of high technology weapons through foreign sales agreements was a productive course. The Korean side also briefed on North Korean reactive armor, and on rear area operations, communications interoperability, and organizational and operational development of air control units.

Expert working group meetings on the North Korean threat; reactive armor; and Korean-U.S. command, control, and communications problems were conducted along with the plenary sessions. Korean interest in the details of the current U.S. doctrinal initiative and training programs was close and comprehensive. The talks reflected an earnest interest in mutually beneficial developments and reflected the strong ties based on the memory of the Korean War and a defensive alliance of forty years standing.

TRADOC also took part in the Pacific Armies Management Seminar in Seoul, Korea in May. The U.S. Army Pacific and the ROKA TRADOC co-hosted the conference, at which the TRADOC commander, General Foss, presented a briefing on low intensity conflict. Brig. Gen. Grogan attended as the official TRADOC delegate. The periodic Pacific seminar was a cornerstone for the expanding U.S. Army relations with armies of the Asia-Pacific area. Headquarters TRADOC hosted the visit of General Foss' Korean Army counterpart, Lt. Gen. Cho, who visited Fort Monroe in June, followed by visits to Fort Lee, Fort Leavenworth, the National Training Center, and U.S. Army Pacific.<sup>85</sup>

## Japan

The significant Japan-U.S. talks, begun in 1986, had developed into an important exchange, underscoring many potential common interests. Notwithstanding Japan's enforced limited military role since 1945, few military relationships were potentially more critical than that between the United States and the world's second industrial power.

Preceded by a steering committee meeting in Tokyo in April, the seventh round of staff talks between the two armies convened at Fort Monroe between 30 Septem-

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85. (1) Msg. Cdr TRADOC to HQDA, Gen Sullivan, 122123Z Nov 91, subj: US/ROK Staff Talks VIII, Doc II/65. (2) Memo ATCD-YL, Col Richard L. Bevington, Jr., Dir IAPD to ADCSCD, 22 Nov 91, subj: Korea/U.S. (ROK/US) Army Staff Talks (ST) VIII, Doc II/66. (3) Memo ATCD-YL, Brig Gen Timothy J. Grogan to distr, n.d. [1991], subj: Korea/U.S. (ROK/US) Army Staff Talks (ST) VIII Follow-on Actions, Doc II/67. (4) SSHRs, ODCSCDD, CY 91/I, pp. XVIII-4 to XVIII-5, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, IAPD Input on Korea. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

ber and 4 October 1991. Maj. Gen. Toshiaki Miyamoto, Director of Plans and Operations Department, Ground Staff Office, Japan Ground Self Defense Force, led the Japanese delegation. Brig. Gen. Grogan served as U.S. delegation head. General Franks addressed the meeting on 30 September, which was also attended by Lt. Gen. Jack D. Woodall, Commanding General, U.S. Army Japan. The Japanese delegation also visited the Transportation Center at Fort Eustis and in addition received Tactical Air Command briefings by that headquarters.

Briefing on the threat in the Far East in the latter 1990s, the Japanese delegation depicted the major strategic uncertainties Japan faced, stemming from ideological and economic disparities, historic animosity, and other factors, and the importance of Japanese-U.S. security arrangements for regional and world stability. The Japanese revealed their disappointment in the lack of Self Defense Force participation during Operations Desert Shield and Desert Storm, a political stricture determined by the legislative power, the Diet. The Japanese party also described plans to move toward a centrally controlled air defense artillery system closely mirroring that used by U.S. forces in Japan. As with most of its allies in the staff talks of 1991, the Japanese showed an acute interest in the logistics, C3I, and other aspects of Operations Desert Shield and Desert Storm. The Japanese also briefed on their midterm concept for conducting bilateral training with the United States at the current level. Additional presentations were presented by future combat doctrine, focused on the defense of Northern Japan and on preparations for defensive emergency.

As in the other fora, the U.S. side fully briefed on the future of the U.S. Army as affected by recent events and concepts, and on the updated AirLand Operations concept. The U.S. stressed the U.S. commitment, in the post-Cold War world, to honor existing treaties with its allies. The U.S. side briefed extensively on joint rear area defensive operations, and supporting discussions took up that topic in regional variations including Korea, Southwest Asia, and Europe. The U.S. additionally presented briefings on air defense command and control and on the self-development test as a new evaluation tool for noncommissioned officers. Working group meetings during the conference elaborated on many of the discussions. Subject matter exchanges during the year focused on logistics, computers and simulations, and on air defense artillery and airspace management. Plans were for staff talks to convene in Japan in October 1992 to take up the major ongoing U.S. doctrinal and training initiatives and on Japanese force developments and binational training plans.

General Franks regarded the 1991 round of talks as one of the most open and frank to date. Writing to General Sullivan on 14 October, he noted the continuing conviction of the Japanese that the United States needed to maintain a "proactive" deterrent, and stabilizing presence in Northeast Asia, pointing to the continuing suspicion in the region as to Japanese intentions and to the destabilization inherent in the projected reunification of Korea. Some possibility of a Self Defense Forces role abroad in disaster relief or peacekeeping was a possibility, dependent on government

decisions. General Franks believed that the talks with the Japanese showed new signs of maturity and that the program was on track.<sup>86</sup>

## Israel

TRADOC's contacts with the Israeli Defense Forces (IDF) dated from 1973 and the close study by TRADOC of the lessons of the Yom Kippur War of that year. Since that occasion, the armies of the two countries had exchanged visits and training, doctrinal, and combat developments information from time to time. No formal staff talks had been established, but in the late 1980s a series of "battlefield conferences" had been initiated by TRADOC. Those meetings featured alternatively visits by each side to the host country and an annual exchange of briefings.

Postponed by Desert Storm from January to November 1991, the fifth Israeli Defense Forces - TRADOC Future Battlefield Conference convened between 10-20 November to follow a trip agenda at several U.S. locations. General Franks headed the U.S. contingent, which included the Headquarters TRADOC chief of staff and both the headquarters and the CAC combat developments and training deputies; the commandants of the Engineer, Armor, Field Artillery, Infantry, and Aviation Schools; and the Department of the Army Inspector General. The Commander, Ground Corps Command of the IDF, Maj. Gen. Emanuel Sakal, headed the Israeli delegation, which included the Israeli Chiefs of Infantry, Air Defense, Engineers, Artillery, and Armor, and an armor division commander, as well as the Israeli Defense, Air, and Army attaches.

After observing unit rotations at the National Training Center and Joint Readiness Training Center, the Israeli commandants visited counterpart TRADOC installations, while Maj. Gen. Sakal visited the Combined Arms Command and Headquarters Department of the Army. The conference closed with two days of discussions at Fort Monroe and visits to a CINCLANTFLT carrier and submarine. The U.S. side presented briefings on Operation Desert Storm, joint air attack teams, AirLand Operations, armor survivability, and TRADOC future programs. The Israelis briefed on combined arms operations, unmanned aerial vehicles, close air support, and fratricide. Among Israeli requests and suggestions were proposals for establishing a combined training exercise in Israel and for acquiring various weaponry information. General Franks reported these conference discussions as candid and useful. The Israelis expressed their admiration for high U.S. training standards. The TRADOC commander viewed the Israelis as favorable to a close cooperative arrangement.<sup>87</sup>

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86 (1) Memo ATCD-YL, Col Richard L. Bevington, Jr., Dir IAPD to ADCSCD, 27 Nov 91, subj: Sum of Japan/United States (JA/US) Army Staff Talks (ST) VII, Doc II/68. (2) Msg, Cdr TRADOC to CSA, Gen Sullivan, 141800Z Oct 91, subj: U.S./Japan Staff Talks VII, Doc II/69. (3) SSHRs, ODCSCDD, CY 91/I, p. XVIII-4, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, Hist Sum, Japanese Program. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

87 (1) Msg, Cdr TRADOC to DA [General Sullivan], 26 Nov 91, subj: Israeli Defense Forces (IDF) Ground Corps Command/U.S. Army TRADOC Future Battlefield Conference (FBC), 10-20 Nov 91, Doc II/70. (2) SSHRs, ODCSCDD, CY 91/I, p. XVIII-3, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, Israeli Program Hist Rept, 1 Jul-31 Dec 91. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

## Activities in Latin America

TRADOC continued to carry out cooperative activities for the U.S. Army with the armies of several Latin American countries in addition to the Brazilian exchange. TRADOC's activities, implemented for the Army by the headquarters and subordinate organizations, complemented those of U.S. Army South, the Army component of U.S. Southern Command, as well as those of the TRADOC-commanded U.S. Army School of the Americas. Subject matter expert groups were the usual vehicle for the training, equipment, or doctrinal aid supplied. The expert exchanges supported the Secretary of the Army's Latin American Cooperation Program as well as the Army Chief of Staff's standardization and interoperability goals. The number and activity of these exchanges had stepped up in the late 1980s through the initiative of the TRADOC commander, General Maxwell R. Thurman, subsequently to command U.S. Southern Command during the U.S. military action of December 1989 - January 1990 in Panama, Operation Just Cause. Not the least of the problems facing the Latin American armies that solicited U.S. military training assistance was the international drug traffic from the Andean countries northward and the threat the powerful drug merchants posed to civil order. TRADOC exchanges were active during 1991 with Peru, Venezuela, Argentina, and Chile.

Based on 1990 planning, a TRADOC group carried out exchanges with the Peruvian Army on operations in low- and mid-intensity conflict during 24-28 June. Representatives from CASCOC conducted an expert exchange on logistical support for low intensity conflict and counterinsurgency at the Peruvian 2d Military Region in Lima from 5-9 August. The U.S. Army Aviation Center and the Combined Arms Command conducted further exchanges there during 19-23 August and 7-15 September, respectively. These contacts registered the situation of an ill-resourced government and federal army beset by the effects of the massive influence of cocaine producers, the Maoist "Shining Path" guerrilla movement and the Tupac Amaru Revolutionary movement, and other destabilizing forces. The exchanges provided information on short-term remedies such as nickel-cadmium batteries and anti-fungicide fuels for Peruvian aircraft, as well as long-term solutions such as the organization of forward army and refueling point operations. In its fourth expert exchange on intelligence, the U.S. also shared its own counterinsurgency experience from operations in Vietnam, Grenada, Panama, and El Salvador. U.S. briefers found the general security situation considerably deteriorated since the previous year's visit, with increasing loss of Peruvian Army morale.<sup>88</sup>

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88. (1) SSHRs, ODCSCDD, CY 91/I, p. XVIII-5, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, Fact Sheet ATCD-YL, 25 Feb 92, subj: Hist Rept for SMEEs with Latin American Armies, Jan-Jul 91. (CONFIDENTIAL --Info used is UNCLASSIFIED) (2) Memo ATCL-C, USACASCOM, Dir, Cons and Doc to Cdr TRADOC, 6 Sep 91, subj: Log Spt for Low Intensity Conflict (LIC)/Counterinsurgency (CI) Subject Matter Expert Exchange (SMEE) with Peruvian Army, 5-9 Aug 91, Doc II/71. (3) Memo ATZQ-DOT, USA Avn Cen, Dir Dept of Tact and Simulation to Cdr TRADOC, n.d. [1991], subj: Aviation Subject Matter Expert Exchange (SMEE) to Peru, Doc II/72. (4) Memo, Dep Comdt CGSC to Cdr TRADOC, 28 Oct 91, subj: U.S./Peru (PE) Subject Matter Expert Exchange (SMEE) on Intell/CounterIntell Operations, Doc II/73.

Expert exchanges with the Venezuelan Army included a civil affairs exchange on 11-15 March, a leadership exchange conducted by the CGSC Center for Army Leadership at the Venezuelan Military Academy in Caracas during 15-21 September, and a command, control, communications and intelligence exchange conducted by CAC and the Signal Center at Fort Gordon on 23-27 September. Venezuelan Army delegations visited U.S. facilities in Panama and the United States during March-April. The exchanges produced valuable insights into the status of the Venezuelan Army as it sought an acquaintance with automation technology and with U.S. leadership training.<sup>89</sup>

Following 1990 planning with the Chilean Army, TRADOC conducted expert exchanges on tactical simulation on 11-15 March; air defense artillery during 6-13 April; rotary-wing aviation during 11-18 May; and combined arms and desert warfare, between 23 August and 2 September. The latter exchange, conducted at Antofagasta, Chile, included visits to Chilean military locations and provided the U.S. Army solid information on the Chilean Army's force structure, organization, and equipment.<sup>90</sup> Expert exchanges with Argentina in 1991 included meetings on tactical simulations during 17-23 March, combined arms during 13-20 April, and the Concept Based Requirements System from 4-11 May 1991.<sup>91</sup> The year also witnessed an orientation visit to several U.S. Army posts by a general officer delegation of the Mexican Army to examine U.S. Army training.<sup>92</sup>

Continued...

See this document for a first-hand comprehensive sketch of the Peruvian political and social crisis and its military dilemma

89 (1) SSHRs, ODCSCDD, CY 91/I, p. XVIII-7, (SECRET -- Info used is UNCLASSIFIED). CY 91/II, Fact Sheet ATCD-YL, 25 Feb 92, subj: Hist Rept for SMEE with Latin American Armies, Jul-Dec 91. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Memo, Lt Col Thomas U. Gibbons, Head, U.S. Delegation to Cdr TRADOC, n.d. [1991], subj: U.S./Venezuelan (VE) Subject Matter Expert Exchange (SMEE) on C3I at Fort Leavenworth, Doc II/74. (3) Memo, Col Leroy Zimmerman, Dir Center for Army Leadership, CGSC to Cdr TRADOC, 10 Oct 91, subj: U.S./Venezuela (VE) Leadership Subject Matter Expert Exchange (SMEE) After Action Report, Doc II/75.

90 (1) SSHRs, ODCSCDD, CY 91/I, p. XVIII-2, (SECRET -- Info used is UNCLASSIFIED). CY 91/II, Fact Sheet ATCD-YL, 25 Feb 92, subj: Hist Rept for SMEE with Latin American Countries, Jul-Dec 91. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Memo ATSB-WPG, Lt Col Peter F. Sun, Ch, Gunnery Div, USA Armor Sch to Cdr TRADOC, 23 Sep 91, subj: United States/Chile SMEE on Combined Arms/Desert Warfare, 23 Aug - 2 Sep 91, Doc II/76.

91 SSHR, ODCSCDD, CY 91/I, p. XVIII-I, (SECRET -- Info used is UNCLASSIFIED)

92 Msg, USDAO Mexico to Cdr TRADOC, 302326Z Jul 91, subj: Mexican Orientation Visit



### **Russian and Polish Contacts**

A symbol of the world turned upside down by the collapse of communism was the visit of a delegation from the Frunze Military Academy in Moscow to the U.S. Army Command and General Staff College during 3-7 December 1991. Heading the delegation was Gen. Maj. M.T. Demenkov, Deputy of the academy and its acting head. Gen. Maj. Demenkov and his party received CGSC briefings on leader development, the Combined Arms and Services Staff School, and the School for Advanced Military Studies. The delegation visited the 1st Infantry Division at Fort Riley. The Russian academy head met the TRADOC commander and, in Washington, the Chief of Staff of the Army. The Russians sought a long-term exchange program between the two academies, possibly as early as 1992. At the close of the year, the request awaited developments in diplomatic channels.<sup>93</sup>

The CGSC hosted a Polish Army delegation at Fort Leavenworth on 22-23 July. Headed by the Ground Defense Department, National Defense Academy, the delegation indicated Polish interest in setting up a direct link for exchange of information between the two schools as well as an exchange program for instructors and students. The Poles received briefings and tours of the School for Advanced Military Studies and other CGSC courses.<sup>94</sup>

### **Liaison Officers**

During 1991, the TRADOC liaison officer network continued to function in the headquarters of certain U.S. military commands as well as in military command headquarters, schools or military missions of ten allied nations. TRADOC liaison officers served abroad in Germany, the United Kingdom, France, Spain, Italy, Turkey, Israel, Korea, Japan, and Canada. In 1991, 13 nations sent liaison officers to TRADOC headquarters, including all the above, plus Brazil, the Netherlands, and Australia. The U.S. Air Force and Marine Corps also had liaison officers at Fort Monroe. A listing of those organizations to which Headquarters TRADOC sent liaison officers appears in the headquarters organization chart, App. A.

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93. Msg, Cdr USACAC to Cdr TRADOC, CofS TRADOC, USDAO Moscow, HQDA, 061840Z Dec 91, subj: Frunze Military Academy Visit to USACGSC, Doc II/77.

94. Msg, Comdt USACGSC to Cdr TRADOC, 262230Z Jul 91, subj: After Action Report of Polish DV Visit to Fort Leavenworth, Doc II/78.

### **Chapter III**

## **FORCE DESIGN AND EQUIPMENT REQUIREMENTS**

### **Force Design**

Constant design adjustments to the tactical and support organizations of the Army of Excellence (AOE) designed in 1983-1984 were necessitated by doctrinal and equipment changes. In the late 1980s, however, the Army entered a period of significant force reduction set in motion by the Conventional Forces Europe Treaty negotiations between NATO and the Warsaw Pact. That reduction was accelerated by the disintegration of the Soviet-led pact and, in 1991, by the political dismantling of the Soviet Union itself. A drawdown of the U.S. Army toward a goal of 535,000 Active Army troops was forecast. In this period of doctrinal and organizational change, TRADOC Commanding General Frederick M. Franks, Jr. called a halt to major future force design work, pending decisions yet to be made that would clarify the doctrine and design of the smaller contingency and projection force toward which the Army was moving. However, TRADOC dealt in 1991 with a number of tactical organization issues affecting current forces. TRADOC force designers at the Combined Arms Command (CAC) briefed the Chief of Staff of the Army on those design adjustments for decision, just as they regularly had since creation of the AOE in 1983-1984. In 1991, only one such formal force design update was presented, on 5 March, though the Army Chief of Staff made force decisions at other major meetings during the year.<sup>1</sup>

### **Light Infantry Division Developments**

Deferring decisions on enhancements suggested for the light infantry division (LID) at the force design update meeting on 5 March, the Army Chief of Staff, General Carl E. Vuono told TRADOC to review the entire light infantry division concept as it applied to AirLand Battle - Future, soon to be retitled AirLand Operations. The Combined Arms Command accordingly solicited views widely from the Army in the field. Notable was the Forces Command reply on 2 May. FORSCOM opposed any "heavy-ing-up", arguing from the basis of the division's original 1983-1984 design tenets: rapid strategic deployability, and the ability of the light division to fight in restricted terrain like mountains and forests where heavy forces could not go. The FORSCOM planners cautioned against adaptations that would compromise the division's flexible lightness, and pointed to its success in Operations Golden Pheasant, Nimrod Dancer, and Just Cause. FORSCOM also drew attention to the dramatic firepower improvements to be introduced by the division's longer-ranged British light howitzer and the AAWS-M antitank weapon soon to come. They warned that, whereas the demands of Desert Storm had clearly required heavy forces, light infantry would be the key to victory in tomorrow's battles in jungles, mountains, or forests. The 7th Infantry Division (Light) commander backed up the FORSCOM endorsement on 13 June, adding a

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1. The TRADOC commanding general announced this decision on 6 January 1992. MFR ATMH, OCH, 6 Jan 92, subj: Force Design.

specific criticism as to just what specific light division capabilities had been neglected in Army force structuring during the intervening years.<sup>2</sup>

Briefed on those and other field responses on 13 June, General Vuono affirmed that the concept of the light infantry division as a rapidly deployable force, infantry intensive, remained valid. Vuono noted that the likelihood of brigade deployments, reflecting the expanded focus of the original concept, had strengthened the division's versatility. General Vuono conceded that light division technology had not garnered the needed priority. The Chief of Staff of the Army believed, however, that while the LID's size and deployment constraints remained valid, they were not the definitive measure of "goodness". Even so, he directed perseverance in improving the division's capabilities, potential, and value as an integral part of the deterrent strategic force structure.<sup>3</sup>

One previous LID design decision went forward. The Chief of Staff of the Army had approved implementation of a main support battalion - 3 forward support battalion structure for the division support command in August 1990, with conversion set for 1991. During the year, that implementation was rescheduled for April 1992. An evaluation by the Combined Arms Support Command was positive, indicating that the redesign improved command and control.<sup>4</sup> Several other proposed adjustments were in consideration late in the year. They included adding two long range surveillance unit teams, the sortie-sparing elimination of the division's sole 155-mm. towed howitzer battery, and reorganization of the signal mobile subscriber equipment battalion to two light contingency communications packages.<sup>5</sup>

Gain in lightness was always a loss in capability. Decisions had to be judicious. Redesign of the LID signal battalion provided a case in point. The XVIII Airborne Corps commander cautioned TRADOC force designers against letting air sortie dogmas dictate capability. Signal forces usually arrived by sea anyway, he argued, with air assets given over to more critical combat and logistics priorities -- just as Operation Desert Storm had again demonstrated. As modern war became more signal- and

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2. (1) Msg, Cdr USACAC to distr, 192955Z Mar 91, subj: LID Concept Review. (2) Msg, Cdr FORSCOM to distr, 021400Z May 91, SAB, Doc III/1. (3) SSHR, ODCSCDD, CY 91/1, p. XVI-5. (SECRET -- Info used is UNCLASSIFIED) (4) Msg, Cdr 7ID(L) to Cdrs I Corps, FORSCOM, and TRADOC, 131900Z Jun 91, subj: Army Modernization Memo, Doc III/2.

3. Msg, Cdr USACAC to distr, 161640Z Aug 91, subj: LID Concept Review, Doc III/3.

4. (1) Msg, Cdr FORSCOM to HQDA, 191635Z Feb 91, subj: LID DISCOM Conversion to FSB/MSB Model, Doc III/4. (2) Transmittal, Action, and Control Sheet ATCD-ET, ODCSCDD, 17 Jan 92, subj: Readahead for CG, TRADOC, Force Design Update (FDU) Briefing, hereafter: ODCSCDD Action Sheet, 17 Jan 92, Doc III/5.

5. ODCSCDD Action Sheet, 17 Jan 92, Doc III/5.

intelligence-dependent, it was a mistake, the XVIII Airborne Corps argued, to cut the new capabilities.<sup>6</sup>

Work by CAC designers on the Light Forces Master Plan came to a halt in 1991, pending development of the new FM 100-5 and the light forces AirLand Operations design, which was scheduled for review and approval in late 1993. Effort on the Light Forces Modernization Plan, scheduled for completion in June 1994, likewise stood in deferral pending those developments and decisions.<sup>7</sup>

### **Cavalry Developments**

Combined Arms Command and Armor Center planners continued to work with a redesign plan for the heavy division's cavalry squadron, one that would field an additional ground troop for a squadron total of three. Also at issue was TRADOC's recommendation to the Department of the Army in 1990 that two proposed platoon designs be considered: mixed Abrams tank-Bradley cavalry fighting vehicle (CFV) platoons in the ground troops, or pure platoons of each vehicle. Decisions by Chief of Staff of the Army General Gordon R. Sullivan at the Total Army Analysis-99 meeting of 1 October 1991 were the following. General Sullivan approved the third ground troop, and he approved the mixed Abrams-Bradley platoon. The ground troops of the tank and mechanized infantry divisions' cavalry squadrons would field 3 mixed platoons of 2 Abrams tanks and 3 Bradley CFVs each.<sup>8</sup>

Considerable work went into reexamination of the battalion scout platoon following a Department of the Army directive in October 1991. This organization had ten HMMWVs (high mobility, multipurpose wheeled vehicles) and had been approved by the Army Chief of Staff in December 1989 for implementation. The department wanted a basic review of the fitness of the platoon's organization, equipment, and tactics vis-a-vis its missions, as well as a review of the concept in light of Desert Storm experience -- for 1992 decisions. The basic question was the adequate robustness of the HMMWV equipped scout platoon not only for reconnaissance but for its screening and security missions. Undertaken by the Armor Center, the review found that Desert Storm shed little light on the HMMWV-scout platoon, since the platoon had been fielded there with a variety of vehicles. The Armor Center believed the ten-HMMWV table was right, a view backed by the Center for Army Lessons Learned, but with adequate, specified detection equipment, armament, and an "uparmored" HMMWV vari-

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6. Msg, Cdr XVIII Airborne Corps to distr, 111330Z Feb 91, subj: Results of LID MSE Signal Battalion Design Workshop, Doc III/6.

7. SSHRs, ODCSCDD, CY 91/I, p. XIII-7, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. XIII-23 to XIII-24. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

8 (1) Msg, Cdr USACAC to Comdt Armor Cen, 232024Z May 91, subj: Div Cav Sqdn Redesign, Doc III/7. (2) Msg, DA to distr, 042058Z Oct 91, subj: Total Army Analysis-99 (TAA-99) Results. (3) MFR ATMH, OCH, 26 May 92, subj: Div Cav Sqdn.

ant for the HMMWV to effectively carry out all its cavalry missions. Department of the Army decisions were expected in 1992.<sup>9</sup>

The need for a scout capability in the brigade, in discussion for several years, was brought to the fore by Operation Desert Storm. The need made manifest by that experience, moved General Franks on 11 October to direct CAC to expedite a force design for fielding as soon as possible. CAC replied with a development schedule on 25 October, projecting an operational concept by the end of the year and approval and documentation of tables of organization and equipment by October 1992. Particular attention was necessary as to how brigade scouts, battalion scouts, and division cavalry meshed.<sup>10</sup>

The Department of the Army also directed TRADOC, in September, to design and analyze alternatives for a light cavalry regiment. Specifications were: the best mix of air and ground forces; rapidly air-deployable by C141 or C17; global utility in all roles; self-contained maintenance and support; 100 percent organically mobile excepting off-road tactical mobility; 24-hour all-weather capability; ability to use and coordinate organic direct and general support reinforcing long-range artillery and air fires, and human intelligence verification capability. The Combined Arms Command developed several types of organization to meet the light cavalry regiment design, including Armored Gun System and Future Scout Vehicle equipment, and briefed options to General Franks on 29 October. The TRADOC commander's guidance was to develop the design with current available equipment, and examine deployment methods and the weapon mix, including a heavy-light mix. General Franks directed planners to discuss the design with the XVIII Airborne Corps. The TRADOC commander wanted a more complete study of the prospective design, which was outlined by the DCS for Operations and Plans to the Chief of Staff of the Army with related issues on 20 December. TRADOC planners expected to complete the study and analysis by April 1992.<sup>11</sup>

#### **Realignment of the Air Assault Division Design and Concept of Operation**

Approved by the Army Chief of Staff in 1991 was a realignment of the 101st Airborne Division (Air Assault) design and concept of operations termed "Slim Eagle," to enhance its capabilities and strategic deployability in accordance with Desert Storm

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9 (1) Msg. HQDA to distr. 081040Z Oct 91, subj. HMMWV Scout Platoon, Doc III 8. (2) Msg. Cdr USACAC to Comdt. Arm Sch. 181830Z Oct 91, SAB, Doc III 9. (3) Msg. Cdr TRADOC to Cdr USACAC and Comdt. Arm Sch. 281316Z Oct 91, SAB, Doc III 10. (4) Msg. Comdt. Armor Sch to Cdr USACAC, 241540Z Dec 91, SAB, Doc III 11.

10 (1) Msg. Cdr TRADOC to Cdr CAC, 111730Z Oct 91, subj. Bde Scouts. (2) Msg. Cdr USACAC to Cdr TRADOC, 252045Z Oct 91, subj. Bde Scouts. (3) SSHR, ODCSCDD CY 91/II, pp. XVI-16 to XVI-17 (CONFIDENTIAL -- Info used is UNCLASSIFIED)

11 (1) SSHR, ODCSCDD, CY 91/II, pp. XIII-33, XVI-17 to XVI-18 (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) MFR DAMO-FDF, ODCSOPS, 23 Dec 91, subj. 199th SIB (Mtz) and 194th SAB Designs and Missions -- Decision Briefing, Doc III/12.

experience. The redesign emphasized the unit distribution logistics concept. It reduced the number of types of vehicles, replacing two-and-one-half-ton trucks with five-ton trucks as in the light infantry and airborne divisions, for example. The redesign put more reliance on trailers and containers, eliminated redundant capabilities, and integrated air and ground movement capabilities. A related effort was a FORSCOM request in May 1991 that TRADOC redesign the air assault and airborne divisions' support commands. The idea was to go from the current forward area support coordination office (FASCO) configuration to the main support battalion - three forward support battalion design common to the heavy divisions and to the light infantry division. Those redesigns were in progress at the close of the year.<sup>12</sup>

### Cadre Divisions

By Department of the Army direction late the previous year, TRADOC had begun developing alternative cadre division organizations. The aim of the cadre divisions would be to provide force expansibility for mobilization as the Army entered the period of post Cold War contraction. Tentative plans called for two active or reserve component divisions with the mission of replacing deployed divisions during mobilization. Early in 1991, the headquarters, aided by CAC, completed the analysis, organizational design, and training requirements for the cadre division concept. The concept was briefed to Chief of Staff of the Army General Vuono on 14 June.

General Vuono approved organization of two cadre divisions in the Army National Guard in 1994 and 1995, along with the development of the necessary cadre manning options. Vuono determined that the cadre divisions would not conduct post-mobilization initial entry training. He directed that they be manned at below 6,000 personnel each. Vuono further directed examination of projected implementing mechanisms and the feasibility of earlier implementation. One possibility to be examined was conversion of U.S. Army Reserve training divisions to cadre combat divisions. However, because various cadre division options were emerging late in the year, and in the context of the evolving Army, fixed TOE planning was in October decelerated. The future course of the cadre division initiative was not clear at the close of the year.<sup>13</sup>

12 (1) ODCSCDD Action Sheet, 17 Jan 92, Doc III/5. (2) Msg, Cdr FORSCOM to Cdr USACAC, 221530Z May 91, subj: Airborne Division Support Command Redesign, Doc III/13. (3) Msg, Cdr TRADOC to Cdrs, CASCOC, FORSCOM, CAC, 201230Z Jun 91, subj: Airborne DISCOM Redesign, Doc III/14.

13 (1) Msg, Cdr USACAC to distr, 241850Z Jun 91, subj: Cadre Div Dev, Doc III/15. (2) Msg, HQDA to Cdrs TRADOC and FORSCOM, 261531Z Jun 91, subj: Implementation of Cadre Division Tasks, Doc III/16. (3) Msg, HQDA to Cdrs TRADOC and FORSCOM and Chiefs Army Reserve and National Guard Bureau, and Dir ARNG, subj: Cadre Div Implem, Doc III/17. (4) TRADOC ACH, CY 90, p. 84. (FOR OFFICIAL USE ONLY -- Info used is not protected) (5) SSHR, ODCSCDD, CY 91 I p. XVI-5 (SECRET -- Info used is UNCLASSIFIED)

## Bradley Battalion Review

Also active in 1991 was a project to review the composition of the mechanized infantry battalion. This action resulted from General Vuono's concern about the low number of soldiers actually free to dismount from Bradley Fighting Vehicles to fight on foot. Vuono was also concerned about the large battalion headquarters and headquarters company (HHC), and the need for a full-up antiarmor company -- company E of the battalion, with its twelve improved TOW vehicles (ITV). CAC planners let the dismount problem lie, pending future force decisions and recommended no change in the HHC, but proposed eliminating the ITV company because of the vehicle's inability to keep up with the Bradley. They recommended substituting an armor or mechanized battalion line company to perform the antiarmor company's fixing and overwatch function. However, the Infantry School opposed eliminating the ITV company, and Army reviews also supported retaining it. TRADOC headquarters did not see substitution of a mechanized or tank company as a solution. At the Total Army Analysis-99 meeting of 1 October 1991, the Chief of Staff of the Army approved keeping the antiarmor company in the mechanized infantry battalion.<sup>14</sup>

## Ranger and Special Operations Forces Concerns

The 1989 operational concept for the Army's Ranger Regiment completed its delayed staffing at the Infantry School in early 1991 and went to the Combined Arms Command for final coordination. The delay resulted from the proponenty controversy related to the Army special operations forces (SOF) combat service support review and the delayed TRADOC-U.S. Army Special Operations Command memorandum of understanding (at length approved on 30 May 1991). One remaining issue in the concept was the inclusion of a Ranger support battalion. TRADOC's view was that that inclusion was redundant because the existent 528th Special Operations Support Battalion would serve the function adequately. The U.S. Special Operations Command concurred in TRADOC's view. Looking at the SOF combat service support plans in June, the Vice Chief of Staff of the Army approved a planned restructuring of the 528th and leaving intact the recently activated theater army special operations support commands (TASOSCs) designed by TRADOC in 1989. The Vice Chief of Staff directed USSOCOM to initiate a request through the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict to increase Army end strength by 561 illets to accommodate the special operations units. Development of the 528th organization tables went forward in late 1991 toward projected completion the following June.<sup>15</sup>

14 (1) ODCSCDD Action Sheet, 17 Jan 92, Doc III/5. (2) Msg, HQDA to Cdrs TRADOC and CAC, 181118Z Apr 91, subj: The Bradley Battalion Structure, Doc III/18. (3) Msg, DA to distr, 042058Z Oct 91, subj: Total Army Analysis-99 (TAA-99) Results.

15. (1) SSHRs, ODCSCDD, CY 91/I, pp. XIII-8 to XIII-9, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. XIII-25. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Msg, USCINCSOC to distr, 251855Z Jun 91, subj: Unit Reference Sheet (URS/DTOE) for SOSB Action Officers Workshop, Doc III/19. (3) MOU Between Cdr USASOC and USATRADOC, subj: Responsibilities and Relationships of the USASOC and the USATRADOC, s/Lt Gen Michael F. Spigelmire, CG USASOC, 16 May 91; and Gen John W. Foss, CG USATRADOC, 30 May 91, Doc III/20.

## Other Design Issues

On 5 March, the Army Chief of Staff approved the Engineer Restructure Initiative that TRADOC had submitted the previous year. This plan, growing out of the Engineer Force, or E-Force, operational concept of 1989, would shift the engineer structure in the heavy corps forward to the divisions. In the division, the current engineer combat battalion would be multiplied to three -- one in support of each brigade -- but with the battalions reduced from 890 to 433 personnel each. Engineer battalion and structure at corps level were deleted to accomplish the division gain. An engineer regimental headquarters in each division provided command and control and engineer staff responsive to the division. Overall Army savings were considerable, totalling over 1,600 personnel.<sup>16</sup>

Another issue examined in 1991, and still pending at the close of the year, was placement of long range surveillance units (LRSU). In June, the Department of the Army told TRADOC to determine whether those specialized units should be assigned to the military intelligence battalion or to the heavy division's cavalry squadron. TRADOC passed the assignment to CAC on 19 June. CAC's response on this long-controversial issue was to recommend removal of LRSUs from the division and their consolidation at corps, in keeping with corps doctrine, AirLand Operations concepts, and affordability factors.<sup>17</sup>

The Department of the Army assigned TRADOC on 9 May to develop designs for the Belgian Trinationai Corps, one of the NATO corps formations in planning for the smaller alliance defense establishment of the post-Cold War era. TRADOC passed the assignment to CAC on 24 July. Design of the U.S. portion of the corps focused on two possible packages: a separate heavy brigade with combat service support slice (a heavy support battalion); and a separate heavy brigade with combat service support slice and corps troops, as requested by the Belgians for their "ideal" corps structure.<sup>18</sup>

Among other 1991 force design actions, the Chief of Staff of the Army approved in March a TRADOC proposal for a Combat Service Support Automation Management Office. Current automation system resources were to be used for its implementation. General Vuono wanted the new structure studied for one year. He also directed TRADOC to lay out the whole corps-division automation management concept and identify the central office responsible for data management of the several systems

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16. (1) Msg. DA to distr, 211925Z Mar 91, subj: Fall 90 Army of Excellence (AOE) Update Briefing, Doc III/21. (2) TRADOC ACH, CY 90, pp. 82-83. (FOR OFFICIAL USE ONLY -- Info used is not protected) (3) SSHR, ODCSCDD, CY 91/I, p. XVI-5. (SECRET -- Info used is UNCLASSIFIED)

17. Msg. Cdr USACAC to Cdr TRADOC, 221630Z Jul 91, subj: Long Range Surveillance Units (LRSU) Structure, Doc III/22.

18. Msg. HQDA to Cdr TRADOC, 021500Z Aug 91, subj: Study Requirement - Belgian Trinationai Corps (BTC), Doc III/23.



involved.<sup>19</sup> Also approved in March was the TRADOC proposal to man the new OH-58D Kiowa helicopter with two pilots. The proposal was based on the fact that the D-model Kiowa had a more-developed mission than predecessor aircraft, with increased emphasis on night and adverse weather use. Effectiveness, safety, and survivability were all served. Implementation was subject to subsequent resourcing. General Vuono additionally approved in March the equipping of the XVIII Airborne Corps assault helicopter fleet with door gunners.<sup>20</sup> In another action, CAC continued design of a theater army headquarters table of organization and equipment (TOE) to replace the Headquarters USAREUR table of distribution and allowances (TDA) organization.<sup>21</sup> Pending resolution of the operations doctrine of FM 100-5, work was deferred in 1991 on a heavy division design conformed to the AirLand Operations concept, which General Vuono had requested in August 1990.<sup>22</sup>

### Warfighting Lens

A new force design effort in 1991 was an initiative by General Franks called "Warfighting Lens." Meant to focus combat developments on force modernization through the year 2008, it was essentially a review of planned Army materiel acquisition in the context of the most likely scenarios in order to assess the combat power and strategic and operational utility of specific developmental weapons and equipment. Planners saw the warfighting lens methodology as a good way to pin down the value of a given weapon system in the larger modernization program.

As part of the method, planners in the headquarters developed likely "division ready brigade task forces" for three force packages along with division and corps support. They also developed diagrams of the force packages, specifying their airborne, mechanized, armored, and corps support components, and their key weapon systems. The planners considered each package in the framework of a time lens, with increment checks at the fiscal years 1994, 1999, and 2008. The method provided a way to judge both specific and collective contributions of systems.<sup>23</sup>

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19. (1) Msg. DA to distr. 211925Z Mar 91, subj: Fall 90 Army of Excellence (AOE) Update Briefing, Doc III/21. (2) SSHR, ODCSCDD, CY 91/I, pp. XVI-5 to XVI-6. (SECRET -- Info used is UNCLASSIFIED)

20. (1) Msg. DA to distr. 211925Z Mar 91, subj: Fall 90 Army of Excellence (AOE) Update Briefing, Doc III/21. (2) SSHR, ODCSCDD, CY 91/I, p. XVI-5. (SECRET -- Info used is UNCLASSIFIED)

21. Msg. Cdr USACAC to Cdr TRADOC, 201334Z Aug 91, subj: Theater Army (TA) HQ TOE for USAREUR, Doc III/24

22. Msg. Cdr USACAC to Cdr TRADOC, 221330Z Aug 91, subj: Evaluation of the Heavy Division AirLand Operations (ALO) Concept, Doc III/25

23. SSHR, ODCSCDD, CY 91/II, pp. XVI-5 to XVI-6. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

## **Personnel Administration Center**

Early in 1991 the TRADOC commander issued guidance governing the future of the battalion personnel administration center (PAC). The PAC had long functioned as a centralized means to spare the company commander and first sergeant paperwork burdens that would interfere with their primary training mission. Elimination of the traditional company clerk by the centralized PAC, however, had not dealt wholly with the reality of the company's clerical needs, and nearly all companies used "shadow clerks" to meet exigencies. Studies since the mid-1970s supported the PAC concept, while advising of the need for more PAC clerks and better equipment, software, procedures, and training. Although initiatives resulting from the studies were coming to fruition in 1990, the Department of the Army DCS for Personnel recommended reducing the PAC and funding company clerks once again. Alternatively, the Army Director of Information Systems for C4 (command, control, communications, and computers) recommended laptop computers manned by an "out-of-hide" clerk in each company as a solution.

Briefing the TRADOC commander on 6 February 1991, the Soldier Support Center supported keeping the PAC, affiliating PAC clerks with each company, providing the structure and funding to program the PAC in accordance with MOS 75B manpower authorization criteria, expanding the number of PAC workstations, and pushing use of the Tactical Army Combat Service Support Computer System. The Soldier Support Center also recommended including a PAC multi-functional clerk with the primary MOS of the unit supported, and authorization of a laptop computer in the company.

General Foss's guidance was to maintain the PAC, resource it adequately to support the company commander, consolidate PAC MOSs, affiliate the PAC clerks with companies, permit the company a computer, but add no new company personnel or MOSs for administration. The TRADOC commander advised rigorous "configuration control" for the company computer capability so that the company did not take on functions never intended for it.<sup>24</sup>

## **The Soldier as a System**

In July 1991, the Army Chief of Staff assigned TRADOC to reexamine the Soldier Modernization Plan in view of Operation Desert Storm lessons and the applicability of the Army's Communities of Excellence principles. The thrust of this effort was to improve quality of life standards for the soldier in the field. TRADOC advised the Department of the Army DCS for Operations and Plans that such improvements would require an Army commitment to adequately fund field feeding, field services, and personnel and administrative support. Additional time to staff Army-wide the revised draft of the Soldier Modernization Plan would also be needed.

Managing and equipping the soldier as a "system" was a new emphasis in 1991, one which General Franks added in TRADOC, soon after he arrived, to the five TRADOC development focuses: doctrine, organization, training, materiel requirements, and leadership training. TRADOC established three soldier categories for the new

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24 SSHR, ODCSCDD, CY 91/I, pp. XV-9 to XV-11. (SECRET -- Info used is UNCLASSIFIED)

system view, which it communicated to the major subordinate commands and schools early in the year. They were: dismounted combat soldiers, combat crew soldiers (air and ground), and all other soldiers not in the first two categories. The soldier as a system was also the focus of an Army Science Board 1991 summer study sponsored by the Assistant Secretary of the Army for Research, Development, and Acquisition and the Commandant, Infantry School. The board affirmed the idea of a general-officer-level soldier system manager and made specific recommendations for technological enhancements to soldier safety and effectiveness. In TRADOC, the TRADOC System Manager - Soldier was the command-wide manager of the new emphasis. During 1991, that official coordinated the Soldier Modernization Plan revision, which was scheduled for review by the TRADOC commander in February 1992.

The soldier system initiative had a high funding priority in 1991. A Soldier Systems Program Review was held at Natick Research and Development Engineering Laboratories on 8 July, attended by both the Army Materiel Command (AMC) and TRADOC commanders. Attendees at that review examined many of the cost-cutting measures of recent years, such as the individual ready-to-eat meal. That ration, they believed, needed to be used only when it was tactically infeasible to serve well prepared hot meals. Soldier services needed rebuilding for forward-deployed units in undeveloped theaters. The Combat Service Support Systems Program Review of 5 November 1991 also turned attention to these and other soldier issues. Marked interest by the Army senior leadership was evident through the year. Also in progress by developers was a Soldier Enhancement Program to focus on weapon and equipment specific to the needs of the soldier. Yet another soldier initiative, and part of the program just noted, was a 3 July directive of the Chief of Staff of the Army which directed quality of life improvements for soldiers. Following up, the Department of the Army told TRADOC and AMC to develop a collective support package. TRADOC assisted AMC in that effort, which would furnish containerized soldier support packages for brigade-size forces.<sup>25</sup>

#### **Functional Area Assessments**

For the second straight year, no functional area assessments (FAA) were held. FAAs were TRADOC-supported, Department of the Army-sponsored analytical reviews that assessed the status of major developments in the modernization of nineteen branches and functions. Plans, however, called for resumption of the FAAs in 1992, at six per year. Unlike the FAAs used extensively during the buildup of the 1980s, the new round would serve as a format to review the effects on the individual branches of the Army drawdown. The FAAs would address all issues: structure, doctrine, training, personnel, equipment, modernization, reserves, and stationing. On 15 October, the Vice Chief of Staff of the Army reaffirmed that approach. Leading off in 1992, FAAs were planned for field artillery, armor, air defense artillery, chemical, engineer, and infantry. A "mini" FAA was planned for nuclear-biological-chemical

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25. (1) ODCSCDD SSHRs, CY 91/I, pp. XV-2, XV-6, XV-11, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, pp. XV-24 to XV-27, XV-29 to XV-32. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Oral History Interview, Maj Gen Stephen Silvasy, Jr., DCSCDD, 19 Sep 91, by John Romjue. (3) Msg, HQDA to distr, 031321Z Jul 91, subj: Soldier as a System, Doc III/26. (4) Msg, DA to Cdrs AMC and TRADOC, 301350Z Oct 91, subj: Collective Support Package, Doc III/27.

defense as the lead-off meeting, in January 1992, to be followed by the field artillery FAA in March. TRADOC issued format guidance on 4 November 1991. To complement the FAAs, the Department of the Army DCS for Personnel developed plans during the year to undertake personnel functional assessments of each branch.<sup>26</sup>

### **Materiel Modernization**

Modernization was a continual process. Equipment did not appear overnight in the field, ready for soldiers to put hands on. Rather modernization embodied a commitment to a long-term, long-range program designed to provide soldiers the best modern equipment. From drawing board to fielding, modernization was often a process of a decade or more. Equipment used successfully in Southwest Asia, such as the Abrams tank, the Bradley Fighting Vehicle, the Apache helicopter, the Patriot air defense missile, and even the HMMWV<sup>27</sup>, represented years of planning and development. Although Operations Desert Shield and Desert Storm validated the development and procurement processes, massive defense cuts levied during and immediately after the conflict threatened emerging systems. Weapons and equipment such as the Army Tactical Missile System (ATACMS), the Multiple Launch Rocket System (MLRS), the Comanche helicopter, and even upgrades to the Black Hawk and Kiowa fleet swung in the uncertain balance between perceived need and commitment to fund.

Modernization in the early 1990s was guided by a set of six principles designed to provide direction and consistent levels of attention and effort over time. The first modernization principle called for continuous modernization to assure a qualitative lead over opponents' warfighting capability. The second principle proposed to field new equipment to units in priority, with the first fieldings to those units first to fight. That principle assumed constrained funding, assumed that all units could not be simultaneously equipped. Priority would go to those units identified as being the first committed, primarily contingency and forward deployed forces. The third principle allowed for modernization by force package. A force package was defined as one of three discrete groupings of units. Equipment within a force package could be block modified or replaced en masse, providing equivalent capability and compatibility for all units within a force package. As modernized equipment was fielded to units by force package, the equipment it replaced was cascaded down to the next force package. Least capable equipment was retired as early as possible. The fourth modernization principle was to provide maximum lethality and survivability to the force. Systems had to have overmatching lethality. The fifth principle was to optimize readiness and training. The goal was to minimize new training tasks while maximizing existing soldier

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26 (1) TRADOC ACH, CY 90, pp. 89-90. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) SSHRs, ODCSCDD, CY 91/I, p. XVI-4, (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. XVI-17. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (3) Msg, Cdr TRADOC to distr, 041230Z Nov 91, subj: Focus and Conduct for Future FAA, Doc III/28. (4) Paper ATCD-ET, ODCSCDD, FAA Milestones [as of 30 Dec 91], Doc III/29. (5) Msg, DA to distr, 011700Z Aug 91, subj: Personnel Functional Assessments, Doc III/30.

27. The Army replacement for the jeep, HMMWV stood for High Mobility Multipurpose Wheeled Vehicle.

skills. The final principle was to build and maintain a balanced force capability. As the Army reduced in size, a proper mix of combat capability was paramount.<sup>28</sup>

### **Combat Developments Management**

The Army's force modernization strategy addressed warfighting deficiencies and opportunities, which TRADOC monitored through the concept based requirements system, or CBRS. The CBRS was designed to define the process and guide the development of products. The concept developments process drove doctrine, training, leader development, and equipment and force developments. Under headquarters supervision, the U.S. Army Combined Arms Command was the lead agency for implementing the CBRS and developing its products, integrating the efforts of the Combined Arms Support Command and all TRADOC centers and schools. Over the course of 1991, an initiative was proposed to transfer selected CBRS functions from the Combined Arms Command to Headquarters, TRADOC. Those management functions were the Army Modernization Memorandum, Long-range Army Materiel Requirements Plan, Battlefield Development Plan, functional area assessments, technology base integration and prioritization, training developments support for CBRS, and combat development studies management.<sup>29</sup>

The CBRS process was continually updated to incorporate the changing threat and revised analyses and doctrine. The CBRS fed directly into the Battlefield Development Plan (BDP), the Army Modernization Memorandum (AMM), and the Long Range Army Materiel Requirements Plan (LRAMRP). The LRAMRP was the starting point for the Headquarters Department of the Army Long Range Research Development and Acquisition Plan (LRRDAP). The FY 1994-2008 LRAMRP was provided to the department in October 1991. The LRRDAP was the bridge between the Army's planning function and the research and development program. The LRRDAP formed the basis for the research and development portion of the Army Program Objective Memorandum (POM) for FY 1994-1999. Those documents were prepared cyclically, as was the CBRS, integrating the five TRADOC functions -- doctrine, training, leader development, force design, and equipment requirements. Through the CBRS, the commanders-in-chief, major Army commands, and centers and schools were afforded the opportunity to provide and assess warfighting needs, capabilities, and requirements. The BDP described the warfighting needs of the future Army, and the AMM and LRAMRP provided warfighting solutions. The BDP was built upon battlefield functional mission areas and capability packages which were fed into the system by function. Functional area assessments were branch oriented, and in 1991 were focused on the build-down of the force with consideration given to stationing, training, readiness, sustainability, versa-

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28 Strategic Force, Strategic Vision for the 1990s and Beyond: A Statement on the Posture of the United States Army, Fiscal Year 1993, presented to the Committees and Subcommittees of the United States Senate and the House of Representatives, Second Session, 102d Congress, by the Honorable Michael P.W. Stone and General Gordon R. Sullivan, p. 42.

29. (1) Memo ATCD-R, Cdr TRADOC to Cdr CAC, n.d. [July 1991], subj: Concept Plan, Realignment of Combat Developments Functions. (2) Memo, ODCSCDD Prog Mgt and Svcs Dir to DCSCDD, DCST, DCSRM, DCSBOS, DCSA, n.d. [July 1991], subj: Realignment of Combat Developments Functions.

tility, deployability, lethality, the active and reserve component mix, and equipment. For 1991, functional area assessments were due on aviation, field artillery, ordnance, and special operations forces.<sup>30</sup>

The Warfighting Lens, a commanding general initiative in 1991, proved to be as overarching as the CBRS, to the acquisition process, was a Commanding General initiative new in 1991. Termed the Warfighting Lens, this was a perspective through which TRADOC proposed to focus its combat developments effort. Warfighting Lens, in its initial conceptualization, consisted of a review of Headquarters Department of the Army acquisition plans in the LRRDAP and analyses to determine warfighting value. That perspective took hardware pieces out of isolation and placed them on the totality of the battlefield in order to more appropriately judge their value and cost.<sup>31</sup>

### **TRADOC Systems Management**

An integral part of the combat developments management process was that established to manage new major weapons systems. TRADOC managed systems in two ways, depending on the type of system. For non-major items, the proponent school and its combat developments directorate had assigned management responsibilities. For selected major and non-major systems, a resident TRADOC System Manager (TSM) was assigned. The TSM was responsible for bringing together all aspects of development, acquisition, and use, including materiel, training, personnel, logistics, and doctrine. The TSM was the TRADOC counterpart to the Army Materiel Command's project manager. It was the system manager's job to insure that new equipment was easily transitioned to the field or met the users' needs.

In January, the Commanding General, TRADOC, General Foss disestablished the TSM Future Armor Resupply Vehicle and the TSM Tank. Additionally, with the annual TSM review for FY 1992-1993 came the requirement to reduce by 25 percent by FY 1994. General Foss proposed the disestablishment of six more TSMs: TSM Combat Net Radio (CNR), TSM Mobile Subscriber Equipment (MSE), and TSM Multi-Service Communications Systems (MSCS) all at the Signal Center, no later than 30 September 1992; the TSM Bradley Fighting Vehicle System (BFVS) at the Infantry School no later than 30 September 1992; the TSM Tactical Wheeled Vehicle (TWV) at the Transportation Center no later than 30 September 1993; and the TSM Maneuver Control System (MCS) at the Combined Arms Command no later than 30 September 1994. Additions in 1991 included the TSM Armored Gun System at Fort Knox, and TSM Combat Service Support System at Fort Lee. Name changes included TSM Army Helicopter improvement program (AHIP) to TSM Kiowa Warrior, TSM light helicopter (LH) to TSM

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30. (1) TRADOC ACH, CY 90, p. 92. (FOR OFFICIAL USE ONLY - Info used is not protected) (2) TRADOC Circular 11-91-1, Concept Based Requirements System (CBRS) 96-10 Cycle Guidance Phase I. (3) Msg, Cdr TRADOC to distr, 251015Z Feb 91, subj: Functional Area Assessment (FAA) Schedule for FY91-93. (4) Msg, Cdr USAISC to distr, 131500Z Nov 91 subj: Long Range Army Materiel Requirements Plan (LRAMP). (5) SSHR, ODCSCDD, CY 91/II, p. XVI-18. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

31. SSHR, ODCSCDD, CY 91/II, pp. XVI-15 - XVI-16. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

Cornanche, TSM Howitzer Improvement Program (HIP) to TSM Cannon, TSM Simulator Networking Technology (SIMNET) to TSM Combined Arms Tactical Trainer (CATT), and TSM Army Data Distribution System (ADDS) to TSM Tactical Communications and Control System (TCCS). TSM ADDS was restructured to accommodate Integrated System Control (ISYSCON) along with key elements of MSE, CNR, and MSCS. Requests for the establishment of TSM Combat Mobility Vehicle and TSM Air Defense Command, Control, Communications, and Intelligence (ADC3I) were not approved.<sup>32</sup>

### **Survey of Major Modernization Programs**

Force modernization requirements for the Army differed significantly from those of other services in that for the Army there were no multiple, "big ticket" items laid against the budget. The Army budget was characterized by its roster of many different systems, procured in large quantities at relatively low dollar cost. In order to achieve a balanced force capability, each system had to be weighed against its contribution to the Total Force in consonance with other systems. Modernized combat maneuver forces had to be complemented by competent combat support and combat service support elements to achieve lethality, flexibility, and survivability.

Operation Desert Storm occupied the world's, and TRADOC's, time and attention for the better part of 1991. The success of the Army's modernization program was demonstrated in that successful military operation. Among the performers were the weaponry produced by the so-called "Big Five" development programs of the 1970s: the AH-64A Apache attack helicopter, the M1A1 Abrams main battle tank, the Patriot air defense missile system, the UH-60 Black Hawk helicopter, and the Bradley fighting vehicles. Those weapons systems were the result of modernization decisions made fifteen to twenty years earlier.

As important as the Big Five were the smaller, sometimes less visible systems and equipment which complemented them. Such battlefield pieces as night vision goggle devices and NBC masks made the difference literally between day and night and victory and defeat. The following brief discussion addresses major and significant weaponry and equipment that TRADOC monitored over the course of the year.

### **Aviation and Associated Systems**

Army helicopters achieved noteworthy success in Operation Desert Storm, validating the Army's aviation modernization efforts. Capturing the spotlight was the AH-64 Apache attack helicopter which slipped across the Iraqi border under cover of darkness, striking enemy air defense targets and opening the air corridor to Baghdad to initiate Operation Desert Storm. The first production helicopter emerged in 1983, and the Army took delivery in January 1984. Since that time the aircraft had been continually examined and refined. As of 1991, 25 of the 40 Apache attack helicopter battal-

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32 (1) TRADOC ACH, CY 90, p. 92. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) Msg. Cdr TRADOC to distr. 291710Z Oct 91, subj: FY92/93 TRADOC System Manager (TSM) Review (3) Briefing Slides, FY92/93 TSM Review, presented by Combat Developments, HQ TRADOC, n.d. (4) SSHRs, ODCSCDD, CY 91/I, p. XVI-1 (SECRET -- Info used is UNCLASSIFIED); CY 91/II, p. XVI-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

ions had been fielded. Armament included a 30-mm. multi-barrel gun as well as Hell-fire missiles. The AH-64 combined lethality with survivability; crew and vital systems were armor-protected and fuel cells were self-sealing, and it possessed day-night and adverse weather capability. Other enhancements to the Apache included modernization in avionics, the Target Acquisition Designation Sight and the Pilot Night Vision Sensor systems. The outputs from the sensors were fed to various cockpit displays. Countermeasures included the ALQ-144 infrared countermeasures turret, which could send intense infrared radiation out in coded sequence causing confusion in heat-seeking missiles, as well as chaff and flare dispensers on each side of the tail boom. One of the keys to successful modernization was the plan for the integration of the Longbow fire control radar system, which, as of November 1991 was not funded in the FY 1992-2008 Long Range Army Materiel Requirements Plan Process. On 20 November 1991, a Headquarters Department of the Army Requirements Review Council was briefed on the Apache modernization program. Alternative modernization strategies were developed and briefed through December. Alternatives included transferring Longbow research development test and evaluation to the Comanche helicopter or elimination of Longbow procurement entirely.<sup>33</sup>

Flying scout for the Apache in Operation Desert Storm was the OH-58C Kiowa and its D variant, the armed Kiowa Warrior. The Kiowa was the Army's answer to the demand for a reconnaissance helicopter that had to fill not only an observation role, but missions that included casualty evacuation, close support, photo reconnaissance, and light transport. The OH-58 had begun production in 1968 with deliveries beginning in 1969. Updated and refined over the years, this same model became the base for the Army Helicopter Improvement Program (AHIP) in 1981. Combining close combat reconnaissance with the ability to support attack helicopters and direct artillery fire, the AHIP introduced a mast-mounted sight, specialized avionics and a cockpit control and display system. This development resulted in two actions. First, it laid the base for development of the LH (light helicopter). Secondly, it filled the need in the interim as the Kiowa Warrior, OH-58D. In 1991 the OH-58D was in its seventh year of production. Beginning with FY 1991 deliveries, the aircraft were equipped with the air-to-air Stinger missiles. In Southwest Asia, the Kiowa Warrior exceeded all performance standards. Meanwhile, in May 1991, the system's critical operational issues and criteria (COIC) document was revised and approved by the Department of the Army DCS for Operations and Plans. Later in May the revised Kiowa test and evaluation master plan was approved. Kiowa Warrior production began in July 1991 with fielding beginning with the 4th Battalion, 17th Cavalry at Fort Bragg anticipated in March 1992.<sup>34</sup>

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33 (1) SSHRs, ODCSCDD, CY 90/I, p. XIII-25 (SECRET -- Info used is UNCLASSIFIED). CY 90/II, p. XIII-9. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Desert Storm Special Study Project Report, Oct 1991, Vol IV, p. IV-1-22. (SECRET - Info used is UNCLASSIFIED)

34 (1) SSHRs, ODCSCDD, CY 90/I, p. XIII-26 (SECRET -- Info used is UNCLASSIFIED). CY 90/II, p. XIII-14. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Army 1991 Greenbook, p. 245. (3) Desert Storm Special Study Project Report, Oct 1991, Vol IV, p. IV-1-24. (SECRET -- Info used is UNCLASSIFIED)



The Kiowa Warrior, even its very early stages, had never been intended as anything more than an interim solution. The Warrior was to occupy the space, and attempt to fill the need, while development progressed on a new armed reconnaissance helicopter. Development of the future helicopter had begun in the 1980s as the LHX, subsequently designated the LH, and finally the RAH-66 Comanche. The Comanche was designed to replace the AH-1 Cobra, the OH-6, and the OH-58 A and C helicopters for the mission of attack and armed reconnaissance. The Comanche as designed was highly maneuverable, operationally effective in adverse weather, at night, on nap of the earth operations, in nuclear, biological and chemical environments, and in operations on the electronic battlefield of the future. The Comanche completed the initial demonstration validation phase, and a follow-on demonstration validation prototype phase began when the contract was awarded to Boeing Helicopters and Sikorsky Aircraft on 12 April 1991. The aircraft was developed with a 52-month demonstration validation prototype phase in order to complete aircraft design, build the prototype aircraft, and conduct the flight test program to reduce risk and demonstrate that the system was ready to enter full scale development when the time came. The first flight was tentatively scheduled for August 1994. By the close of 1991, TRADOC had approved the required operational capability document which was forwarded by the Department of the Army to the Office of the Secretary of Defense. Additionally, the Light Helicopter milestone II cost and operational effectiveness analysis was approved by the Commander, CAC and forwarded to those headquarters. Looking far to the future, the Comanche's initial operational capability date was projected for December 1998.<sup>35</sup>

A host of aviation topics were active issues over the course of the year, from distinct equipment pieces such as aviation ultra high frequency radios, nap of the earth communications, aviator's night vision system heads up display, side armor protection for the UH-60 Blackhawk, the enhanced airborne target handover system, to larger issues including command and control aircraft, and medical evacuation aircraft. Of particular interest was the Utility Aircraft Requirement Study (UTARS), chartered by the Vice Chief of Staff of the Army to recommend a solution to the utility fleet modernization issues due to the UH-60 shortfall and the age of the UH-1 fleet. The findings of the report were that assault, medical evacuation, resupply, and many command and control missions could only be fulfilled by the UH-60. Remaining command and control missions could be accomplished by a Light Utility Helicopter (LUH). TRADOC's recommendation was for an all-UH-60 utility fleet.<sup>36</sup>

### **Close Combat**

Operation Desert Storm tested the mettle of the armored systems as well. Main battle tanks, armored personnel carriers, and fighting vehicles were deployed to the desert war and severely tested. From the older M60A3 to the new M1A1, main battle tanks were closely observed. Likewise, Operation Desert Storm provided an important proving ground for the Bradley Fighting Vehicle, another one of the Big Five.

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35. SSHRs, ODCSCDD, CY 90/I, p. XIII-25 (SECRET -- Info used is UNCLASSIFIED); CY 90/II, p. XIII-13. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

36. SSHRs, ODCSCDD, CY 90/I, p. XIII-26 (SECRET -- Info used is UNCLASSIFIED); CY 90/II, pp. XIII-8 - XIII-14. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

While Operation Desert Storm validated the Army's force structure and equipment, and hence the modernization initiatives and procurement process, the conclusion of the war brought back the new reality of the dissolution of the Soviet Union and the Warsaw Pact threat. Those turns of international affairs brought to the fore the perception that heavy force dominance was less critical to the overall force structure. Immediately, armored systems modernization was perceived through a different lens. Beginning in August 1991, Headquarters TRADOC and the Department of the Army DCS for Operations began discussions of the evolving armored systems modernization effort. Within TRADOC, schools were assigned to review system requirements and provide recommendations to CAC, then on to Headquarters TRADOC to form the basis of the TRADOC position. In December 1991, the Secretary of the Army forwarded the Army's armored systems modernization restructuring position to the Office of the Secretary of Defense. Key provisions were to defer development of the Block III tank, the future infantry fighting vehicle, and combat mobility vehicle; accelerate the development of the advanced field artillery system and future armored resupply vehicle on a common chassis; realign funding for the armored gun system; and reduce procurement for the Line of Sight Antitank weapon. Desert Storm ideas included a command and control vehicle on a modified Bradley chassis along with an improved M88A1 recovery vehicle and an engineer breacher and bridger; limited M1 tank upgrades and new M1A2 tank production.<sup>37</sup>

When the Desert Storm ground offensive opened in February 1991, all eyes turned toward the Abrams main battle tank. Both M1s and M1A1s were fielded; both performed spectacularly. Modernization of the main battle tank fleet continued through 1991. The preplanned product improvements, known as Block II, undertaken to produce the M1A2 model had been approved by the Army in February 1985. A special M1A2 Army system acquisition review council was held in March 1990 and confirmed the Army's plan to procure some 62 M1A2s. The improvements included an improved commander's weapon station, the commander's independent thermal viewer, and position navigation equipment. The first operational M1A2 prototype was delivered in December 1990, and the first production tank was scheduled for delivery in November 1992. Five M1A2s completed the early user test and experimentation at Fort Hunter Liggett in California in 1991. Test results, evaluated by the Operational Test and Evaluation Command, were to be available by March 1992.<sup>38</sup>

The Bradley Fighting Vehicle also had its combat debut in Operation Desert Storm and collected rave reviews. The requirements for the Bradley were mobility equal to the most modern tank, main armament powerful enough to handle enemy light armor and the ability to support the infantry squad when dismounted action was necessary. The current production configuration was the A2 which had improved protection against kinetic energy weapons, an antispall liner, ammunition restowage and

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37 SSHRs, ODCSCDD, CY 90, I, p. XIII-2 (SECRET -- Info used is UNCLASSIFIED); CY 90, II, p. XIII-28 (CONFIDENTIAL -- Info used is UNCLASSIFIED)

38 (1) SSHRs, ODCSCDD, CY 90, I, p. XIII-3 (SECRET -- Info used is UNCLASSIFIED), CY 90, II, p. XIII-30 (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Col Walter J. Boyne (Ret), The Weapons of Desert Storm, Lincolnwood, Ill.: Publications International, Ltd., 1991, p. 53 (3) Army Greenbook 1991, p. 294

mounting hardware for reactive armor. The M2A2 began production in 1988. In 1991 distribution was completed to the 2d Infantry Division and distribution to the 24th Infantry Division (Mechanized) began.<sup>39</sup>

The developmental armored gun system maintained its momentum despite budget uncertainties. A Vice Chief of Staff of the Army decision review, held in March 1991, approved a modified nondevelopmental item acquisition strategy which would lead to fielding no later than FY 1997. The requirement was for a deployable (low velocity, air drop capable) mobile armored gun to replace the aging M551A1 for light forces. Desired capabilities included kinetic energy killing power, mobility to support infantry assaults, and high volume firepower. The cost and operational effectiveness analysis was presented to the Department of the Army during December 1991 and demonstrated the battlefield contribution of the armored gun system to light and airborne forces and determined that the Marine Corps' LAV-10's was not suitable for the mission. The cost and operational effectiveness analysis final report was released at the end of December.<sup>40</sup>

The advanced antitank weapons systems programs involved the development and acquisition of both medium and heavy antitank systems designed to replace the Dragon and TOW missiles. The Advanced Antitank Weapons System-Medium (AAWS-M) was being developed for dismounted infantry. Replacing the Dragon, it was man-portable, consisted of the missile round and command and launch unit. In December 1990, the system was named Javelin. As of December 1991, the Javelin program was 29 months into its 54-month engineering manufacturing development phase. Beset by program slippage and cost overrun, the Javelin program was reviewed several times over the course of the year. It was scheduled for initial fielding in FY 1996.<sup>41</sup>

The Advanced Antitank Weapons System-Heavy (AAWS-H) was in development to replace the TOW antiarmor system. Systems under consideration included the Line-of-Sight Antitank (LOSAT) weapon which was a kinetic energy missile on a modified Bradley chassis to replace the improved TOW vehicle; the TOW sight improvement program (TSIP) as a materiel change to improve the existing Bradley and HMMWV TOW systems; and the Advanced Missile System-Heavy or TOW2B. The Army's priority for development was the LOSAT system. In March 1991, it was announced that LTV Corporation would be the single source contractor for the LOSAT system during the engineering manufacturing development phase. In May the required operational capability document was approved at Headquarters Department of the Army. The TSIP

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39. SSHRs, ODCSCDD, CY 90/I, p. XIII-6 (SECRET -- Info used is UNCLASSIFIED); and CY 90/II, XIII-15. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

40. SSHRs, ODCSCDD, CY 90/I, p. XIII-2 (SECRET -- Info used is UNCLASSIFIED); CY 90/II, pp. XIII-30. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

41. (1) SSHRs, ODCSCDD, CY 90/I, p. XIII-16 (SECRET -- Info used is UNCLASSIFIED); CY 90/II, p. XIII-24. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) TRADOC ACH, CY 90, p. 96 (FOR OFFICIAL USE ONLY -- Info used is not protected)

program was terminated by the Secretary of the Army on 17 October 1991 primarily due to anticipated lack of available funding.<sup>42</sup>

### **Air Defense and Field Artillery Systems**

Gaining fame in Operation Desert Storm was the Army's Patriot tactical air defense missile system. The Patriot was a medium and high altitude ground-to-air missile system. Its development had begun in 1964 as a counter to high performance aircraft. Full scale development began in 1972, limited production began in 1980, and deployment of the first operational battalion in Europe was completed in early 1985. The Patriot was subsequently product improved; the phase II (PAC-II) Patriot was deployed to Southwest Asia ahead of schedule. Its third phase model, PAC-III, consisted of integrated complementary improvements to be delivered in a series of phased, incrementally fielded materiel changes beginning in 1996. The PAC-III would increase the system's lethality by enhancing detection and engagement capabilities.<sup>43</sup>

Also employed with good results in Operation Desert Storm were the Army Tactical Missile System (ATACMS) and the Multiple Launch Rocket System (MLRS). The ATACMS was the Army's longest-range surface-to-surface missile. The first production missiles were accepted in March 1990 with initial fielding scheduled for Germany during September 1990. When Iraq invaded Kuwait, fielding was accelerated and shifted to Saudi Arabia. Over thirty ATACMS were fired in Operation Desert Storm, employed against various targets such as logistical and air defense sites, vehicles, and rocket and cannon artillery units. All ATACMS missiles were effective against their targets. ATACMS was fired from a modified MLRS launcher. MLRS fired twelve free flight rockets per launcher load. Designed to complement conventional tube artillery, the MLRS laid down a devastating blanket of fire against a designated target area.<sup>44</sup>

### **Combat Support**

Combat support equipment was tested no less rigorously during Operation Desert Storm and with no less success. Several command and control innovations as well as such notable systems as the Guardrail Common Sensor, Joint STARS and unmanned aerial vehicles were tried and found true over the course of the war.

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42. SSHRs, ODCSCDD, CY/90, pp. XIII-4 - XIII-6 (SECRET -- Info used is UNCLASSIFIED); CY 90/II, pp. XIII-33 - XIII-35. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

43. (1) SSHR, ODCSCDD, CY 90/II, p. XIII-2. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Memorandum for Record ATBO-JM, 22 Jan 1991, subj: Operation Desert Storm Summary #3. (SECRET/NOFORN/WNINTEL -- Info used is UNCLASSIFIED) (3) Desert Storm Special Study Project Report, Oct 1991, Vol IV, p. IV-3. (SECRET -- Info used is UNCLASSIFIED)

44. (1) SSHRs, ODCSCDD, CY 90/I, p. XIII-20 (SECRET -- Info used is UNCLASSIFIED); CY 90/II p. XIII-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Desert Storm Special Study Project Report, Oct 1991, Vol IV, p. IV-2. (SECRET -- Info used is UNCLASSIFIED)

In December 1990, the Joint Surveillance and Target Acquisition Radar System was ordered deployed to Saudi Arabia to support Operation Desert Shield. Two Joint STARS aircraft were put into standard configuration, Army and Air Force air and ground crews were trained, and the 4411th Joint STARS Squadron (USAF) and the 1st Operational Detachment - Joint STARS (Army) were activated. The two aircraft with crew arrived in Saudi Arabia in January, days ahead of the Army ground station modules (GSMs). The GSMs were deployed to ARCENT, VII Corps, XVIII Airborne Corps, and the Marine Corps Expeditionary Force. A total of 49 sorties were flown during Operation Desert Storm. Interestingly, during the last quarter of 1991, the battle proven Joint STARS successfully completed its formal system level performance evaluation.<sup>45</sup>

As a result of Operation Desert Storm, TRADOC placed unmanned aerial vehicle (UAV) acquisition in the top ten category. From 1 February 1991 through 3 March 1991, VII Corps' UAV Platoon (the 111st MI Brigade's UAV Platoon from Fort Huachuca), equipped with five Pioneer air vehicles, flew forty-six combat sorties establishing credibility for the system and validating the combat utility of UAVs. Missions were flown day and night, for route and area reconnaissance, target acquisition and battle damage assessment. No air vehicles were lost or hit. Three air vehicles were damaged during launch or recovery, but all were repaired and returned to duty. Late in 1991 the UAV Platoon and its equipment redeployed to Fort Huachuca. The Pioneer was only part of the UAV program. Of the other two systems, there was no change to the close-range UAV program, while the short-range UAV program announced suspension of ongoing technical testing. Technical testing was scheduled to resume in January and February 1992.<sup>46</sup>

The initial Guardrail Common Sensor system was fielded in June 1991 with the deployment of eight RC-12K aircraft and associated ground equipment to the 1st Military Intelligence Battalion, V Corps, in Wiesbaden, Germany. The system included communications and electronic intelligence sensors with a high accuracy airborne location system. As the Guardrail systems were fielded, they replaced existing electronic intelligence systems which operated in the OV-1D aircraft as well as Guardrail V communications intelligence systems which operated in the RU-21 aircraft. Anticipated fielding for the Guardrail system was FY 1994. In August 1991, TRADOC approved the operational and organizational plan for the Aerial Common Sensor-Corps. That was an airborne intelligence collection system to replace the Guardrail Common Sensor in the 21st Century.<sup>47</sup>

The Army found itself using three generations of area communications systems in support of Operation Desert Storm. Despite initial interoperability problems, the U.S. Army established the largest automatic switched voice network in history. A major

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45 SSHRs, ODCSCDD, CY 90 I, p. XIV-1 (SECRET -- Info used is UNCLASSIFIED); CY 90/II, p. XIV-6 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

46 SSHRs, ODCSCDD, CY 90 I, p. XIV-3 (SECRET -- Info used is UNCLASSIFIED); CY 90/II, p. XIV-12 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

47 SSHRs, ODCSCDD, CY 90, I, XIV-6 (SECRET -- Info used is UNCLASSIFIED); CY 90 II, XIV-11 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

contributor was the new Mobile Subscriber Equipment (MSE) common user switched network for corps and divisions. MSE provided a survivable, secure, mobile, command and control capability for voice, data, and facsimile transmissions. MSE, interfaced with tactical satellite and tropospheric scatter radio, enabled signal unit commanders to support rapidly advancing corps in the offense and corps commanders to extend their span of control across great distances.

Despite the fact that only a few radios were provided to the Army (700) and the USMC (350) for use in Desert Storm, the Single Channel Ground and Airborne Radio System (SINGCARS) provided extremely reliable communications. The radio displayed 7,000 hours mean time between failure rate, as well as a thirty percent range increase from older radios.

Used in Operation Desert Storm, and found to be absolutely critical to command and control was the global positioning system (GPS). The GPS was a position/navigation aid, allowing aircraft and fighting units the ability to navigate and determine their position under adverse weather conditions 24 hours a day. A total of 8,545 Small Lightweight GPS Receivers were bought for Desert Storm with 3,500 actually fielded.<sup>48</sup>

### **Combat Service Support**

Combat service support received considerable attention in Operation Desert Storm and served to provide a focus to the Army's mission, and components, especially as Army strength was drawn down. The preponderance of issues and initiatives to make headquarters attention centered on the soldier.

Headquarters TRADOC staff worked with the Headquarters Department of the Army staff, combat and materiel developers, and procurement agencies to accelerate the development and acquisition of new items and to hasten the production of others to meet the needs of the forces in the theater. Clothing and individual equipment items were attended to at once and included laser eye protection, upgraded combat vehicle crewman helmets, desert camouflage uniforms, chemical protective overgarments and undergarments, desert boots, explosive ordnance disposal items and individual micro-climate cooling gear.<sup>49</sup>

As a result of lessons learned in Operation Desert Shield, many studies and working groups were initiated. For instance, the Chief of Staff of the Army assigned TRADOC to reexamine the Soldier Modernization Plan to improve the soldiers' quality of life in a field environment. Areas to be addressed were field feeding and development of a support system that would work in support of forward-deployed units in an undeveloped theater. In February, the Commander, TRADOC, directed a study of

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48. (1) SSHR, ODCSCDD, CY 90/I, p. XIV-13. (SECRET -- Info used is UNCLASSIFIED) (2) TRADOC After Action Report for Operations Desert Shield/Storm, 27 June 1991.

49. (1) TRADOC After Action Report for Operations Desert Shield and Storm, 27 June 1991. (2) Desert Storm Special Study Project Report, Oct 1991, Vol IV, p. IV-5. (SECRET -- Info used is UNCLASSIFIED)

the Army field feeding system. The goal was to reestablish the capability to properly feed soldiers in the field. The TRADOC System Manager-Soldier addressed the problem of basic organizational clothing and individual equipment, soldier to soldier communications, the individually carried personnel record, and the "meals ready-to-eat" field ration.<sup>50</sup>

Trucks -- both heavy equipment transporters (HETs) and vehicles with good off-road mobility capability -- were a concern during operations. The most efficient way to move armored vehicles over long distances in noncombat conditions was to move them on trucks or by rail. That reduced the number of mechanical breakdowns and ensured that the crews arrived rested and prepared to conduct tactical operations. Over 1,200 HETs were required to support U.S. forces during Operation Desert Storm. The Department had only 500 HETs available. The deficiency was satisfied by obtaining 182 HETs (134 leased and 48 purchased) from U.S. trucking companies and acquiring 715 HETs from other nations. HETs were crucial to the movement of forces from Saudi Arabian ports to desert tactical assembly areas, many of which were over 300 miles away. Throughout Operation Desert Storm there was a long haul requirement to move supplies from ports to theater storage areas and from theater storage areas to consuming units. Many vehicles made numerous round trips in order to haul equipment and supplies to new locations. The newly introduced Heavy Expanded Mobility Tactical Truck (HEMTT) performed well in the mission.<sup>51</sup>

### Test and Evaluation

Over the course of 1990, TRADOC had completed its portion of the reorganization of the Army's test and evaluation function. The reorganization had involved the merger of TRADOC's Test and Experimentation Command with the U.S. Army Operational Test and Evaluation Agency to form the U.S. Army Operational Test and Evaluation Command (OPTEC). That consolidation eliminated TRADOC's organic test and experimentation capability, most of which had been in place since 1973. TRADOC's remaining test and evaluation mission included providing combat and training developer input to the test and evaluation process for materiel systems and evaluating TRADOC products. To accomplish the evaluation of TRADOC products, TRADOC controlled funds for the Concept Evaluation Program (CEP) and Force Development Test and Experimentation (FDTE) Program.

TRADOC and OPTEC shared responsibilities. Both were key participants in the periodic meetings of the Test Schedule and Review Committee which coordinated, scheduled, resourced, and prioritized the Army's Five Year Test Program. OPTEC conducted and TRADOC supported early user test and experimentation, operational test and evaluation, force development test and experimentation, the Concept Evaluation Program, and customer tests. TRADOC provided advisory assistance to the OPTEC commander in selecting colonels to serve as directors of evaluation, prioritized testing

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50. SSHR, ODCSCDD, CY 91/II, pp. XV-10, -18, -21, -23-26. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

51. Interim Report to Congress: Conduct of the Persian Gulf Conflict, Pursuant to Title V Persian Gulf Conflict Supplemental Authorization and Personnel Benefits Act of 1991 (Public Law 102-25), April 1992.

requirements for those materiel systems for which TRADOC was the combat or training developer for integration into the Army Five Year Plan, conducted pretest training of player personnel, monitored planning and development of materiel developer system support packages, and assisted OPTEC as appropriate in development of public affairs support plans.<sup>52</sup>

TRADOC and OPTEC reviewed the overall status of the operational test and evaluation process in a functional area review in July. The purpose of the review was to solve problems associated with the process, events, and documentation required for operational test and evaluation. The end result was to be improvement of the systems acquisition process. At the functional area review, TRADOC was assigned to conduct a review of the critical operational issues and criteria (COIC) process as that process had been found to be a major cause of late Test and Evaluation Master Plan submissions. Slippage in the time schedule anywhere along the acquisition process caused expensive delays. The COIC Process Action Team completed its review and reported its results and recommendations for process as well as content improvement to the General Officer Steering Committee in November 1991.<sup>53</sup>

52 TRADOC ACH, CY 90, p. 104. (FOR OFFICIAL USE ONLY -- Info used is not protected)

53 (1) SSHR, ODCSCDD, CY 91-II, pp. XVI-4 - XVI-10. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Memorandum for: Mr. Hollis, HQDA; Maj Gen Granrud, HQDA; Maj Gen Forster, Cdr OPTEC; Brig Gen Hedrick, HQDA; Mr. Westmoreland, AMC; Mr. Valliant, TRADOC, ATCD-ET, 12 Nov 91, subj. Read Ahead Package, General Officer Steering Committee Meeting on 15 November 91, DA Process Action Team for Critical Operational Issues and Criteria Report Out. (3) Memorandum for: Mr. Hollis, Maj Gen Forster, Brig Gen Hedrick, Col Kern, Mr. Westmoreland, Mr. Valliant, ATCD-ET, 22 Nov 91, subj. Minutes of the General Officer Steering Committee for the Total Quality Management Process Action Team on Critical Operational Issues and Criteria.





## Chapter IV

### TRAINING AND LEADER DEVELOPMENT

#### Introduction

As the Army faced a decade of force reductions and smaller budgets, TRADOC training managers and developers were forced to reduce the training base and find new ways to continued strength through training. The smaller the force became, the more important it became that the command provide superior training aimed at maintaining combat readiness. As former Chief of Staff of the Army, General Carl E. Vuono, put it, "the imperative of conducting hard, realistic training is fundamental to the Army's basic mission: to prepare soldiers, units, and leaders to fight and win the wars of our nation." With regard to leader training, he warned that "no leader in America's Army must ever be guilty of that most inexcusable lapse of professional responsibility--sending untrained soldiers into battle." The challenge for TRADOC training planners was to find training programs that were affordable and that would, at the same time, allow the Army to retain the level of readiness needed to *respond successfully on future battlefields*. In making the tough decisions as to how very limited resources should be allocated, TRADOC took deep cuts in training support and training development programs to avoid as much as possible having to cut back on the actual training of individuals and units. It was projected that the funds for training development would decline 75 percent from 1987 to 1993. Training development civilian manpower authorizations had already fallen to 45 percent of the requirements. In addition, during FY 1991, 75 percent of the programs and materials needed in the schools and units for individual and collective training were not delivered as a result of the funding and manpower reductions.<sup>1</sup>

#### Leadership Development Initiatives

Developing leaders in all components of the Army (Active, Reserve, National Guard, and Department of the Army civilians), in light of decreasing resources and a smaller force, challenged TRADOC to maximize every developmental opportunity. Although the focus of increasing attention, the importance of leader development had long been understood. As Lt. Col. William A. Knowlton, Jr. writing in Military Review in May 1991, put it in his study of the leader development system: "During the period between World War I and World War II, an era to which the 1990s is being compared, the Army greatly decreased in size but retained as its highest priority, training, educating and developing its leaders." To guide its leadership development program, the Army had some specific goals. Leaders should be able to trust their subordinates and be able to delegate authority and responsibility. They should learn to encourage soldiers to exercise initiative within the framework of the commander's intent. On the battlefield, leaders should be tactically and technically competent and be able to "see" the battlefield. They should emphasize use of mission orders and the importance of command versus control. Leaders should know the difference between risk and gamble and foster a climate to support sensible risk-taking. Finally

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1. (1) Vuono quotations are in his article "Why We Train," Army Trainer, Fall 1991, p. 3. (2) SSHR, ODCST, CY 91/II, pp. 163-64. (3) Briefing, ODCST, VCSA Visit to HQ TRADOC, 4 Jun 91.

leaders should be trained to confront unpredictable situations, think, and act. The Army would be led in the future by those who were currently squad, section, and platoon leaders. It was the job of commanders and leaders to develop the Army's junior officers.<sup>2</sup>

The Army's renewed emphasis on leader development found formal expression in Department of the Army Pamphlet 600-32, Leader Development, published in May 1991. The doctrinal foundation of leader development rested on three pillars: institutional training; operational assignments; and self-development. How that development occurred was described as a continuous process of education, training, experience, assessment, review, reinforcement, evaluation, and selection for the next leadership level. Responsibility for leader development was shared by leaders in the field army and the soldier himself. The leader development process was nearly identical at all levels and for both the active and reserve components. TRADOC, through the branch proponents, the functional area proponents, and the functional chiefs, was responsible for the institutional phase of leader development. The proponent decided what had to be learned in the schoolhouses and provided the necessary materials for training. The proponent also identified the goals of operational assignments and self-study. Field assignments provided experience and an opportunity to apply theoretical knowledge in a practical setting. New programs for Department of the Army civilians would train leaders in the workplace to perform in positions previously held by military officers. With regard to the third pillar-self-development-every leader was to undertake a professional reading program, correspondence courses, off-duty advanced civil schooling, study, and research, and public service activities. The key to a successful self-development program was believed to be accurate assessment.<sup>3</sup>

With that concept in mind, TRADOC had established a Leader Assessment and Development Program (LADP) in accordance with CAC and Sergeants Major Academy guidance and as an integral part of the Leader Development Action Plan of April 1988. The Plan directed that leadership assessment and development be incorporated into all phases of leader training and education. TRADOC schools implemented the LADP in resident officer training courses during the first and second quarters of FY 1989. In January 1989, a review of the program indicated a need for standardization of assessment and development procedures. As a result, the Center for Army Leadership (CAL) published a LADP memorandum of instruction the following October. The next month, CAL began training for the schools' master assessors. In FY 1990, the schools began including the revised Leader Assessment and Development Program in the Officer Basic Course (OBC), the Officer Advanced Course, the combined Arms and Services Staff School (CAS<sup>3</sup>), the Sergeants Major Academy, First Sergeants Course, and the Advanced Noncommissioned Officer Course.

2 Briefing, ODCSCDD (presented by Major John Gordon), "Concepts and Doctrine for the Future Battlefield," 16 Jan 92. (2) Lt Gen Leonard P. Wishart III, "Leader Development The Enduring Legacy," Military Review, May 1991, p. 1. (3) Lt Col William A. Knowlton, Jr., "Military Qualification Standards: An Officer Leader Development Tool," Military Review, May 1991, P. 34.

3 Col Michael A. Anastasio [Director of the Center for Army Leadership], "Leadership Development: Direction for the Future," Military Review, May 1991, pp. 10-19.

The Warrant Officer Training System (WOTS) and the Basic Noncommissioned Officer Course (BNCOC) were scheduled to have the program in place in FY 1991.<sup>4</sup>

In the summer of 1990, to determine the status of the program, the TRADOC Office of the Deputy Chief of Staff for Training conducted assessments of selected OBCs. Implementation of the LADP was proving to have a number of problems. Those included, among other things, shortages of personnel, a lack of support on the part of some school leaders, too little time devoted to the program, and too many redundant actions. In December 1990, school commandants recommended that the TRADOC commander eliminate the Leader Assessment and Development Program as it was too expensive in terms of dollars and manpower. In January 1991, the Chief of Staff of the Army directed that a cost effectiveness study be made of the program. That action resulted in a revised program with reduced resource requirements. In December 1991 the TRADOC commander directed a focused implementation of the revised LADP in all courses except the Warrant Officer Candidate School, the Warrant Officer Technical and Tactical Certification Course, and the Primary Leadership Development Course (PLDC). There would be two different kinds of programs. The CAS<sup>3</sup>, OBC, and BNCOC courses would run for longer than seven weeks; all other courses would be scaled down to bring them in line with available resources. Full implementation was expected by October 1992.<sup>5</sup>

To preserve the momentum created by the adoption of the Leader Development Action Plan and assist the command to respond to the reality of hard program objective memorandum (POM) decisions, the commandant of the Command and General Staff College (CGSC) requested that the Leader Development Support System develop a leader development investment strategy. In May 1990 a leader development decision network (LDDN) was established to conduct a long term and continuing effort to accomplish a number of objectives. First, Army leader development principles were to be restated and priorities established. Then, the budget, force structure proposals, and leader development programs were to be evaluated for consistency with those principles. The members of the network were to recommend the best leader development investment choices given the FY 1991 budget. In May 1991, a leader development investment strategy action plan was published. The LDDN met in Washington in early December of that year to draw up a specific list of leader development investments and potential divestments. They also planned to identify the lead agency for making decisions concerning resources to be dedicated to each action. In line with TRADOC's "three pillars" of leader development, the attendees were to consider additional programs or the deletion of programs in the areas of institutional training, operational assignments, and self-development.<sup>6</sup>

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4. (1) TRADOC ACH, CY 90, p. 117. (FOR OFFICIAL USE ONLY -- Info used is not protected)

5. SSHR, ODCST, CY 91/I, p. 11; CY 91/II, p. 10. For a detailed description of the LADP and the background of leadership assessment, see Maj Joseph R. Palmer, "Competency-based Leadership," Military Review, May 1991.

6. (1) TRADOC ACH, CY 90, pp. 106-07. (2) Msg, HQDA to distr, 201356Z Nov 91, subj Leader Development Investment Strategy, Doc IV/1.

In support of leader development programs, learning center boards were being established at all TRADOC installations. The purpose of the boards was to identify what facilities would be needed to support leader development, to determine where those facilities should be located, and monitor the services provided soldiers to insure all needs were met. They were also to suggest improvements to insure that quality training support was available as new programs emerged--especially with regard to automation equipment and other training support materials.<sup>7</sup>

### **Civilian Leadership Development**

Because of the increasing conversion of military to civilian positions, especially in the area of base operations, a requirement existed to instruct and prepare civilians for succeeding levels of leadership responsibility. As for their uniformed counterparts, the development of civilian leaders was the result of institutional training, job assignments, and self-development of personnel, in both active and reserve component organizations. In the civilian sector, the Army Civilian Training, Education and Development System (ACTEDS) served to identify requirements and formalize technical and managerial training in a progressive and sequential program from entry to upper management levels. As ACTEDS had evolved, the Center for Army Leadership had developed a Civilian Leadership Training Program which featured a variety of courses for civilians at different grades. Although those courses were not prerequisites for one another, they were aligned with different levels of responsibility. In 1986, the center's Civilian Leadership Training Program had been incorporated as an integral component of ACTEDS. However, the ACTEDS served only those civilians in career management programs. Under development in 1991 was a program to serve noncareer plan civilians (more than 75 percent of the civilian workforce), known as the Civilian Integration into the Personnel Proponent System, or CIPPS. A memorandum from the Department of the Army Deputy Chief of Staff for Personnel activated the program on 18 March 1991. However, at the end of the year, TRADOC still had not reached agreement with the Department of the Army over long range resources for the program.<sup>8</sup>

The civilian Leadership Training Program provided for three levels of training which paralleled the officer leader development system (e.g. intern to OBC, and intermediate to OAC). The first level, the Intern Leadership Development Course, for GS-5 through GS-9 employees, provided for a one-week course to be taught regionally by CAL instructors and preceded graduation to the next level. At the beginning of FY 1991, the course became mandatory for all interns. At the next level, the Leadership Education and Development Course (LEAD) complemented the Supervision Development Course, which was being developed as a correspondence course. The LEAD was recommended for first-time supervisors. The intermediate course consisted of a two-week "train the trainer" course taught by CAL-certified trainers at the Center for Army Leadership, and a one-week course taught at the civilian's place of employment. The intermediate course was designed to form a bridge between the

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7. SSHR, ODCST, CY 91/I, pp. 6-7.

8. (1) Anastasio, "Leader Development," pp. 18-19. (2) TRADOC ACH, CY 90, p. 131. (FOR OFFICIAL USE ONLY - Info used is not protected) (3) SSHR, ODCST, CY 91/I, p. 14.

intern and management level courses. At the managerial level, GS-13 through GM 15, Organizational Leadership for Executives provided leadership training while Personnel Management for Executives and a new Manager Development Course, under development as a correspondence course would provide skill training. The senior course was taught in a two-week session at Fort Leavenworth.<sup>9</sup>

The leader development capstone was the Army Management Staff College (AMSC), designed to train and develop competitively-selected civilians with demonstrated potential for advancement. The recently established college was intended to provide a course of instruction for the sustaining base equivalent to that taught at the Command and General Staff College for officers involved in warfighting. The fourteen-week resident training program was for civilian GS-GM 13-15s and GS 12s. The ten-course curriculum included military forces and doctrine, strategic studies, force integration, resource management, sustainment and materiel management, leadership and management techniques, information management, communicative arts, the Total Army Personnel System, and health and fitness.<sup>10</sup>

### **Review of the Army School Base**

In 1990, a TRADOC task force completed a comprehensive review of the Army School Base. The School 21 Task Force operated under a DA charter to identify ways "to improve the Army School System" and a requirement to coordinate its efforts with Project VANGUARD.<sup>11</sup> The School 21 Task Force made a number of recommendations with regard to Army schools, colleges, and training centers. Some of these recommendations were approved by the Chief of Staff of the Army and Secretary of the Army in December 1990 within the context of the Project VANGUARD study.

A significant recommendation made by both the School 21 Task Force and Project VANGUARD was a proposed consolidation of Army management and sustaining base training under TRADOC using a university concept. The Army leaders approved the VANGUARD proposal for implementation. Schools under review for inclusion in the university structure included the Army Management Staff College, the Army Center for Human Resource Management, the Army Logistics Management College, the Army Management Engineering College, the Community and Family Support Center, the Engineering and Housing Support Center, and the Resource Management Department of the Army Finance School. Those schools were visited by representatives of the TRADOC Office of the Deputy Chief of Staff for Training during 1991. Meanwhile, the Combined Arms Support Command began a cost benefit analysis to determine the feasibility of relocating these schools to Fort Lee. MANDEX Corporation was contracted to develop the Army management university concept to fulfill the VAN-

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9. (1) TRADOC ACH, CY 90, p. 131. (FOR OFFICIAL USE ONLY - Info used is not protected) (2) Anastasio, "Leadership Training," p. 18. (3) SSHR, ODCST, CY 90/I, p. 13.

10. Anastasio, "Leadership Training," pp. 18-19.

11. For a discussion of Project VANGUARD, see TRADOC ACH, CY 90, pp 20-21 and Appendix C.

GUARD decision. The work of MANDEX was expected to be completed by January 1992.

Other recommendations submitted by the School 21 Task Force included the establishment of a Land Power University by consolidating the Army War College and the Command and General Staff College. Such a move would require a Headquarters Department of the Army decision to transfer the Army War College to TRADOC. Further, the School 21 Task Force recommended that command and control of the Northern Warfare Training Center (NWTC), the Academy of Health Sciences, and the Judge Advocate General's School be shifted to TRADOC's command and control. FORSCOM agreed to the NWTC shift and plans were undertaken to complete the transfer during FY 1993. No action was taken with regard to the Academy of Health Sciences or the Judge Advocate General's School. Those transfers required Headquarters Department of the Army approval.<sup>12</sup>

If approved and implemented, another School 21 recommendation would align precommissioning training under one command. That is, the United States Military Academy, the ROTC Cadet Command, and Officer Candidate School Programs would all be aligned under TRADOC. No action was taken by Headquarters Department of the Army on this recommendation during 1991. TRADOC began action on all of these recommendations in 1991 in coordination with the National Guard Bureau; Office of the Chief, Army Reserve; and FORSCOM. Other School 21 recommendations were still under study at Headquarters TRADOC during 1991.<sup>13</sup>

#### **The Army Training System in 1991--Statistics**

The FY 1991 programmed enrollment in the Army's total training program as reflected in the Army Training Requirement and Resources System (ATRRS) was 479,074 for all training centers, service schools, drill sergeants schools, and noncommissioned officer courses. Actual input for the fiscal year was 321,767 students, 67 percent of the programmed requirement. The figures did not include Army students attending Air Force and Navy schools. For FY 1991, TRADOC training managers had planned to train 163,327 soldiers in basic combat training (BCT) and one station unit training (OSUT). Because of the change in mission, that number was reduced to 157,283. As of 31 December 1991, the training mission for FY 1992 had been adjusted from 141,983 to 119,905. The FY 1991 BCT, advanced individual training and OSUT inputs into the training centers and inputs and graduates of the service schools are at Appendices J and K.<sup>14</sup>

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12. (1) ODCST Final Report, TRADOC Review of the Army School Base, 19 Nov 90, p. A-2.

13. Ibid.

14. SSHRs, ODCST, CY 91/1, pp. 50-51; CY 91/II, pp. 62-63.

### Initial Entry Training

TRADOC's goal in the initial entry training (IET) programs was to produce soldiers who were trained to standard, well disciplined, physically fit, and highly motivated. The challenge of 1991 was to achieve those goals in the face of large budget cuts. The efficiency of the training base continued to be improved by minimizing the number of basic combat training (BCT) graduates who had to make costly moves to receive advanced individual training (AIT). Thus, with decreasing Army accessions, the training base structure declined in FY 1991 while the number of one station unit training (OSUT) companies remained relatively constant. Another change to IET was the implementation of the Army's Initial Entry Training Strategy and its revision as it pertained to basic combat training and the BCT core of OSUT.

The effort to develop a new initial entry training strategy dated back to May 1987 when Lt. Gen. John B. Crosby, TRADOC Deputy Commanding General for Training, established a study group to draft a set of standards to improve training effectiveness in IET and to propose how those enhancements should evolve through 1997. After receiving the approval of the Army Chief of Staff, General Carl E. Vuono, the study group drew up an action plan detailing the near-, mid-, and long-term goals that would have to be reached to achieve the aims of the IET strategy. The strategy was designed to optimize training effectiveness, focus on the leader, and hold the IET chain of command responsible for training soldiers, with support from instructor committees and the academic departments of the service schools. The major changes from current policy were that the plan looked to the chain of command rather than the academic departments to determine the effectiveness of training and it relied more on platoon-level training conducted by drill sergeants than in the past. During 1989 and 1990, to bring the BCT program of instruction (POI) more in line with the IET strategy, the Infantry School as BCT proponent prepared and staffed a proposed revision to the POI to change the major focus from company level to platoon level instruction for hand-to-hand combat and physical training. The Infantry School briefed the TRADOC Deputy Chief of Staff for Training on the updated version of the POI in August 1991. Plans were to brief the new POI during the IET Brigade Commanders' Conference in late January 1992.<sup>15</sup>

In August 1988, then TRADOC commander General Maxwell R. Thurman had approved action to reduce the BCT structure from 147 companies to 130 companies, to accommodate budget and end strength reductions. The FY 1991 Active Army structure was reduced in January 1990 by eight BCT companies based on maximum use of reserve training division assets. In March 1990, the Active Army structure for FY 1991 was again reduced in response to announced reductions in the total Army end strength. That reduction allowed the elimination of six BCT companies and five OSUT companies. Continued reductions to total Army end strength were projected

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15 (1) SSHR, ODCST, CY 91/I, p. 2; CY 91/II, p. 3. (2) TRADOC ACH, CY 90, p. 108. For a detailed description of the initial entry training strategy and action plan, see TRADOC ACH, CY 90, pp. 108-09. (FOR OFFICIAL USE ONLY - Info used is not protected)



through FY 1995. The following table reflects the projected BCT and OSUT structures for FY 1991 through FY 1994:<sup>16</sup>

<u>Installation</u>	<u>Number of Companies</u>			
<u>BCT:</u>				
	<u>FY 91</u>	<u>FY 92</u>	<u>FY 93</u>	<u>FY 94</u>
Fort Dix	12	5	0	0
Fort Jackson	45	45	44	41
Fort Knox	12	10	10	10
Fort Leonard Wood	27	25	25	20
Fort Sill	10	10	10	10
Total	106	95	89	81
<u>OSUT:</u>				
Fort Benning	40	31	24	23
Fort Knox	18	12	9	8
Fort Leonard Wood	13	7	10	8
Fort McClellan	14	13	12	10
Fort Sill	14	10	6	6
Total	99	73	61	55

In January 1991, the Department of the Army Office of the Deputy Chief of Staff for Operations and Plans directed TRADOC to determine the feasibility of using cadre divisions in the Army's force structure. The Combined Arms Center (CAC)-Combat Developments was assigned the overall responsibility, while it was the TRADOC Deputy Chief of Staff for Training's role to determine the feasibility of conducting initial entry training in a cadre division. After considerable study of the issue, on 14 June 1991 TRADOC recommended to the Army Chief of Staff that IET not be conducted by cadre divisions. That decision was based on the determination that while training IET in cadre divisions would promote cohesiveness, it was too time consuming, required extensive training areas, and tended to distract from a division's "go to war" focus. The Chief of Staff of the Army concurred with that position. He also directed the TRADOC Deputy Chief of Staff for Training to assist the Office of the Chief, Army Reserve (USAR) and the National Guard Bureau (NGB) in analyzing the feasibility of converting USAR training divisions to cadre divisions. He directed the three agencies to develop a leader development program to provide qualification opportunities to combat cadre divisions and a plan to maximize cohesion in cadre divisions.<sup>17</sup>

In the second half of the year, the Infantry School began a study of infantry rifle marksmanship. The purpose of the study was to develop higher marksmanship standards and methods of sustaining that expertise. The focus was on collective marksmanship through platoon level. The proposed new program would be tested

16 (1) TRADOC ACH, CY 90, p. 111 (FOR OFFICIAL USE ONLY - Info used is not protected) (2) SSHR, ODCST, CY 91 I, p. 51, CY 91 II, p. 63

17 (1) SSHR, ODCST, CY 91 II, p. 31 (2) Briefing Slide, ODCST Quarterly Update to the Chief of Staff, 3 May 91, Doc IV-2

and validated on OSUT soldiers and then translated into a program for all infantrymen. The goals were to train soldiers to fire more accurately at extended ranges, under NBC and night conditions, and against moving targets. The new POI would take 128 hours as opposed to the current one which took 86 hours. It also would include more training with simulators. Completion of a preliminary draft of a new training circular and OSUT validation of the program began in September 1991. Field validation was scheduled to begin in March 1992, with phased implementation expected to begin in FY 1993.<sup>18</sup>

One of the recent modifications to IET was the establishment of a "fast track" program which was open to 10-20 percent of each AIT class. By the end of 1988, all TRADOC schools had set up a fast-track program for emerging leaders, which provided additional MOS instruction above and beyond the normal program of instruction. Soldiers were selected for fast-track on the basis of academic ability, motivation, and overall performance. The possibility of accelerated advancement to private E-2 and private first class provided incentive for program participants. While then TRADOC commander General Maxwell R. Thurman had had great hopes for the program, comments from the field were generally not favorable. As a result, on 21 March 1991 Thurman's successor, General John W. Foss, delegated to the commanders of the service schools the authority to determine the future of their local fast-track programs. Only the Armor, Aviation, Chemical, and Engineer schools chose to keep the program. The problem seemed to be a shortage of NCO teaching staff, limited resources, and limited AIT student interest. In addition, many commanders felt that the rate of return did not justify the training development dollars expended.<sup>19</sup>

### **The Noncommissioned Officer Education System**

The institutional training of noncommissioned officers in both the active and reserve components was accomplished through the Noncommissioned Officer Education System or NCOES. The NCOES served as the cornerstone of the "train the trainer" emphasis that guided TRADOC's approach to its overall training responsibilities. The basic philosophy of NCOES was to train the soldier, promote him to the next higher grade, and utilize him at the skill level for which he had trained. The system was designed to provide progressive and sequential training through four levels of schooling. The first level, the Primary Leadership Development Course (PLDC) was mandatory for soldiers preparing for leadership responsibilities at the grade of sergeant. It included four weeks of field-oriented instruction in subjects common to all MOSs and focused on basic soldier skills. At the next level, the Basic Noncommissioned Officer Course (BNCOC) NCOs were taught the skills necessary to prepare them for duties as staff sergeants. BNCOC emphasized leader training and the critical tactical and technical tasks related to each specific military occupational specialty (MOS). For soldiers with combat support and combat service support MOSs, BNCOC emphasized MOS-related and "common leader training" (CLT) that enhanced training received in the PLDC. The third level, Advanced Noncommissioned Officer Course (ANCOC), prepared staff sergeants and sergeants first class for duties in platoon sergeant and equivalent

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<sup>18</sup> Briefing Slides, TRADOC Liaison Officers' Conference, 25-30 Aug 91, Hampton, Va

<sup>19</sup> SSHRs, ODCST, CY 91/I, p. 3; CY/II, p. 3.

positions. ANCOC also contained common leader training, focused at the unit level. The Sergeants Major Course was the capstone of enlisted training. It prepared selected soldiers for Sergeant Major and Command Sergeant Major duties during both troop and staff assignments. The Sergeants Major Course was a prerequisite for appointment to the duty position of Command Sergeant Major.<sup>20</sup>

Revision to the common leader portions of the BNCOC and ANCOC had begun in 1988 and continued through 1991. In accordance with plans to integrate common leader training wherever possible into MOS technical instruction, the proponent schools continued to work toward that goal. Marksmanship training was initiated in ANCOC in 1989. Marksmanship training began in the PLDC and BNCOC in FY 1991. The Sergeants Major Course was revised to focus instruction more toward battalion and brigade level duties. The amount of communicative skills instruction was increased to better prepare soldiers for their roles as staff sergeants major and command sergeants major. During 1991, the Office of the Deputy Chief of Staff for Training looked at the feasibility of extending the Sergeants Major Course to ten months and reducing the number in attendance. The Sergeants Major Academy briefed that latest initiative to improve the instruction at the Academy to the Chief of Staff of the Army on 20 November 1991. General Sullivan directed the Academy to rework its proposal and resubmit it for review. Meanwhile, in mid-November 1991, General Franks directed that the requirement for rifle qualification to graduate from BNCOC and ANCOC be waived until Fort Benning had completed revision of the marksmanship "train the trainer" program. The revised program was scheduled for completion in May 1992.<sup>21</sup>

For some time, the Primary Leadership Development Course had been a prerequisite for promotion to staff sergeant and attendance at BNCOC. ANCOC was mandatory for promotion to master sergeant, and all active component soldiers had to take the course through resident attendance. The Sergeants Major Course was required before appointment to command sergeant major. After 1 October 1989, soldiers were required to successfully complete the PLDC for promotion to sergeant. After 1 October 1990, BNCOC was mandatory for promotion to sergeant first class. At that time, the Department of the Army hoped to link BNCOC in the future to promotion to staff sergeant and ANCOC to promotion to sergeant first class.<sup>22</sup>

The promotion requirements became an issue during Operations Desert Shield and Desert Storm when a huge backlog of enlisted soldiers had to forego scheduled

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20. (1) SSHR, ODCST, CY 91/I, p. 2. (2) U.S. Senate and House of Representatives, 1st sess 102d Cong., The Honorable Michael P. W. Stone and General Carl E. Vuono, "Maintaining a Trained and Ready Force for the 1990s and Beyond: A Statement on the Posture of the United States Army, Fiscal Years 1992 and 1993", 15 Feb 91, p. 83 [hereafter cited as Army Posture Statement].

21. (1) SSHR, ODCST, CY 91/II, p. 5. (2) TRADOC ACH, CY 90, p. 114. (FOR OFFICIAL USE ONLY - Info used is not protected) (3) Msg Cdr TRADOC to distr, 131500Z Nov 91, subj Marksmanship Training in NCOES, Doc IV/3.

22. TRADOC ACH, CY 90, p. 115. (FOR OFFICIAL USE ONLY - Info used is not protected)

NCOES training, a situation that threatened their advancement through the NCO ranks. Officials at the Total Army Personnel Command estimated that it might take as long as two years to provide courses for all the NCOs who needed them. So that noncommissioned soldiers who had served in the operations in the Persian Gulf would not lose their chance to compete for promotion, the Army waived the necessity to have completed the required courses in order to compete. However, soldiers who were selected for promotion but who had not attended the appropriate level of schooling would not actually be promoted until they completed the necessary course. Instead, they would be scheduled for the training on a priority basis and promoted upon its completion, in line with their sequence number. In a related action affecting the reserve component, in March 1991 the TRADOC commander relaxed the policy that required the completion of phase one of NCOES courses before enrollment in phase two. For the remainder of the training year, enrollment in phase two of the courses was authorized before the completion of phase one.<sup>23</sup>

One of the most important actions in the training arena in 1990 had been the proposal to abandon the long-standing skill qualification tests (SQT) in favor of a new self development test (SDT). The SQT had been developed as a part of the DePuy-Gorman "training revolution" of the mid-1970s. The test had been designed to provide an indicator of soldier proficiency in a military occupational specialty (MOS) and at a given skill level. It consisted initially of a formally administered written test together with hands-on performance of selected tasks from the MOS-specific soldier training publication. In 1983, a number of changes had been made to the SQT to reduce the test administration burden to the field and in response to concerns raised by a 1982 General Accounting Office study. The Individual Training Evaluation Program (ITEP) emerged from the 1983 refinements to the SQT with the SQT becoming an integral part of the system. In addition to the SQT, which became a written test of MOS related skills and knowledge, the ITEP consisted of two other components: the commander's evaluation and the common task test (CTT). The commander's evaluation was an informal, hands-on evaluation of tasks selected by the commander from the soldier's manual for a given MOS. The CTT was a hands-on test of basic combat and survival skills. Units administered all three components of the ITEP annually in the active component and every other year in the reserve components to soldiers in skill levels 1 through 4.<sup>24</sup>

More changes in the SQT were implemented in 1989 to better "battle focus" the test for both active and reserve component units. However, at a Senior Leader Training Conference held in late February 1990, the need was identified for a formally administered written test as a tool for motivating NCO self development in grades sergeant through sergeant first class. General Vuono, then Army Chief of Staff, asked TRADOC to develop a concept for the test and report back to him for a decision on the implementation of the SDT. As General Vuono saw it, the major

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23. (1) The Signal, 5 Apr 91, Fort Gordon, Ga., p. 10. (2) Casemate, 16 Aug 91, Fort Monroe, Va. (3) Msg. Cdr TRADOC to distr, 151940Z Mar 91, subj: Out of Sequence Professional Development Training-Exception to Policy, Doc IV/4.

24. For a detailed description of the SQT and the early development of the self-development test, see TRADOC ACH, CY 90, p. 120-21. (FOR OFFICIAL USE ONLY - Info used is not protected)

change that moving from SQTs to a new self-development test would be the elimination of unit training time for testing. In line with his emphasis on self-development, he believed that NCOs should have to take more responsibility for their own MOS and leadership training and discipline themselves to study on their own time.<sup>25</sup>

TRADOC briefed General Vuono on the final concept in June 1990. In July he announced his decision to eliminate the SQT and institute the SDT. The following month Vuono approved TRADOC's development and implementation plan. As designed, the multiple-choice test had three sections. A "leadership" section was composed of approximately twenty questions taken from FM 22-100, Military Leadership; FM 22-101, Leadership Counseling; and FM 22-102, Soldier Team development. The second section, on training management, would have about twenty questions taken from FM 25-101, Battle Focused Training. The final section, which each proponent school would develop, would comprise about sixty questions from the soldier's manual to test MOS knowledge. The test would be designed so that the soldier could complete it in less than two hours. Once it was fully fielded, performance on the SDT would be a key factor in determining NCO promotion, assignment, school selection, and retention. SDT would not, at least in the beginning, be administered to skill level 1 soldiers, and SQT testing of those soldiers on active duty was originally scheduled to cease on 30 November 1990. SQT testing for skill level one reservists was eliminated in August 1991. Evaluation of those soldiers was performed by unit NCOs. The plan was for each soldier in skill levels 2 through 4 to begin taking the SDT instead of the SQT as soon as a test was available for his particular MOS and grade. The original goal for implementing the SDT in the active component was 1 October 1990; for the reserve component, the target date was 1 October 1991. By the end of 1991, those dates had been pushed back to FY 1992 and FY 1993, respectively. The principal reason was the reluctance to distribute supporting materials until units had returned to a more normal environment after Desert Storm. Although the TRADOC commander requested that SDT testing be delayed until FY 1993 for the active component, the Army Chief of Staff refused to let the implementation dates "slip" any more. Also because of the turbulence created by Desert Storm, the new self development test would not be linked to the EPMS until FY 1994.<sup>26</sup>

Test developers estimated that it should take approximately six months for a soldier to prepare for the initial SDTs. That situation made it necessary to make special arrangements for the large number of NCOs who were or had been deployed to the Arabian Desert. The Army Chief of Staff's decision was that for FY 1992, commanders could request an exemption for units that had participated in Operation

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25. Ibid.

26. (1) TRADOC ACH, CY 90, pp. 120-21. (FOR OFFICIAL USE ONLY - Info used is not protected) (2) SSHR, ODCST, CY 91/I, pp. 9, 137; CY 91/II, p. 7. (3) Msg, HQDA to distr, 041425Z Sep 91, subj: Interim Guidance for the Administration of the Self-Development Test, Doc IV/5. (4) Msg, Cdr TRADOC to distr, 031335Z Dec 91, subj: Self Development Test Implementation. (5) Msg, HQDA to distr, 081312Z Apr 91, subj: Self-development Test (SDT) Implementation, Doc IV/6. (6) Lt Col Willie R. Skinner, James M. Tripp, and Edward S. Braddock, "The Self Development Test: A Test With a Different Purpose," Army Trainer, Fall 1991, pp. 16-17.

Desert Storm. The approval authority for "blanket" exemptions was the major Army commander. The approval authority for individual exemptions associated with Operation Desert Storm was the first commander, lieutenant colonel or above, in the chain of command.<sup>27</sup>

Meanwhile TRADOC began to speed up production and distribution of training support materials for the self development test. Of primary importance was the necessity to produce enough of the four manuals each soldier had to have to prepare for the test. The Department of the Army provided, through TRADOC, a \$1.9 million increase in Army Doctrine and Training Literature Program monies to fund the procurement of 520,000 sets of the manuals. As of the end of June 1991, initial shipments to units worldwide had been completed. Work had also begun on a new Department of the Army pamphlet to address the planning and administration of the SDT. During the year, the civilian test development experts under contract to the Army, began an external evaluation of the new testing program. The independent civilian evaluation aimed to provide specific suggestions for improving the tests and to provide training to improve the test writing competency of SDT developers. The Army was also investigating the cost effectiveness of a new "local optical scanner" for scoring the SDTs. Local scanning was a procedure which allowed unit training standards officers to electronically scan SDT results and transmit them to the Army Training Support Center (ATSC) for immediate scoring and reporting. In late March, the ATSC commander approved up to \$270,000 for a test-bed which would provide more than 70 training standards officers throughout the Army with equipment to test the system.<sup>28</sup>

One of the initiatives contained in the Leader Development Action Plan, which General Vuono had signed in October 1989, was the requirement to develop career progression plans and the integration of those plans in one document. On the basis of the Army Continuing Education System and in coordination with the Combined Arms Support Command (CASCOM), the Office of the TRADOC Deputy Chief of Staff for Training developed a "career map model" for each proponent school to use in developing career maps for each of their career management fields. The maps would show the self-development activities recommended by each proponent, to sequentially and progressively build NCO skills. The self-development activities could be individual study, professional reading, off-duty college or vocational education courses, Army correspondence courses, training extension courses, or other activities. By the end of the year, TRADOC headquarters had completed development of all career maps--thirty-eight in number--and distributed them to all TRADOC installations. The Department of the Army Deputy Chief of Staff for Personnel planned to publish career maps in DA Pam 600-25, NCO Professional Development Guide, in FY 1992.<sup>29</sup>

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27. Msg. HQDA to distr, 041425Z Sep 91, subj: Interim Guidance for the Administration of the Self Development Test (SDT).

28. SSHRs, ODCST, CY 91/I, pp. 110, 141; CY 91/II, pp. 152, 153, 157

29 (1) TRADOC ACH, CY 90, pp. 116-17. (FOR OFFICIAL USE ONLY - Info used is not protected) (2) SSHR, ODCST, CY 91/I, pp. 8-9; CY 91/II, p. 7.

During 1991, the Center for Army Leadership reviewed the system for spouse education and development in the Army. The information gathered would provide the TRADOC commander with a proposed concept for the future. The purpose of the spouse program would be to provide all spouses with the opportunity for a progressive and sequential education. The review indicated that existing Army spouse education focused on officer spouses. To begin to remedy that situation, the Sergeants Major Academy was developing a Command Sergeants Major Course "team" training seminar. The concept would allow spouses to attend a one week seminar at the USASMA. The seminar would be offered eleven times per fiscal year. The first pilot class would be offered in January 1992.<sup>30</sup>

On the assumption that an adequate number of drill sergeants could be trained at fewer drill sergeants' schools (DSS), TRADOC undertook a study to determine the feasibility of consolidating the schools. In FY 1991, the drill sergeants training program had been structured to train 2,960 soldiers. By FY 1993, only 1,800 would have to be trained. When the study began, drill sergeants training was conducted at Forts Benning, Jackson, Knox, Leonard Wood, McClellan, and Sill. Operating fewer DSSs and operating them within the noncommissioned officer academy structure would save manpower and money. After the study group looked at all the factors involved--the costs of base operations, construction, manpower, and other factors--the group studied the effects of having one, two, or three sites. They also studied what the best combinations might be by looking at the pros and cons of all possible combinations. The initial conclusion was that the best solution would be to maintain drill sergeants schools at Forts Jackson, Leonard Wood, and Knox. However, because Fort Benning was the largest user of drill sergeants and also the center of BCT and OSUT expertise, Fort Benning was substituted for Fort Knox. The TRADOC commander approved the revised plan on 28 August 1991, effective 15 October 1992.<sup>31</sup>

#### **Warrant Officer Training and Leader Development**

In 1991, TRADOC continued to refine the "common core" POI in the Total Warrant Officer Training System (WOTS). The WOTS provided a three level progressive and sequential certification for warrant officers. Training and certification occurred at entry, senior, and master levels. At the entry level, soldiers were selected as warrant officer candidates by a centralized board. The trainee then had successfully to complete Warrant Officer Candidate School and the Technical and Tactical Certification Course. The Warrant Officer Candidate School was a standardized training course that all warrant officer candidates had to attend. The course content included instruction in leadership, professional ethics, land navigation, AirLand Battle doctrine, communicative skills, training management, drill, and ceremonies. The Technical and Tactical Certification concentrated on those skills and tasks in which the candidate had to be proficient to perform successfully as a warrant officer. The Senior Warrant Officer Training Course (SWOTC) was designed to refresh and enhance common skills, update technical knowledge, and train senior warrant officers to perform successfully in

30 SSHR, ODCST, CY 91/II, pp. 19-20.

31 (1) Briefing Slides, ODCST, 1991. (2) Telephone conversation with Lt Col Whittaker, ODCST, ITD, 3 Apr 92, subj: Basic Cadre Training Division.

senior-level positions. The Master Warrant Officer Training Course (MWOTC) was designed to develop selected senior warrant officers as systems integrators, managers, and trainers at various organizational levels.<sup>32</sup>

In 1990 efforts had begun to implement the Leader Assessment and Development Program in warrant officer training in 1991. Headquarters Department of the Army, at TRADOC's request, activated the Leader Development Decision Network (LDDN) to formally assess the status of leader development for warrant officers and to draw up a Leader Development Action Plan like those that already existed for officers, enlisted personnel, and civilians. TRADOC chaired the network and produced a Warrant Officer Leader Development Action Plan (WOLDAP) that addressed the three pillars of leader development: institutional training, operational assignments, and self-development. The LDDN considered, among other things, implementation of a leader assessment and development program in the Warrant Officer Training System, modernization of WOTS, assignment policies, MQS for warrant officers, civilian education goals, and leader development for reserve component warrant officers. The final version of the plan was submitted to Headquarters Department of the Army for final staffing in December. A decision briefing for the Chief of Staff of the Army was projected for early 1992.<sup>33</sup>

### **Officer Training**

In 1991, TRADOC continued to work to refine and improve its programs of professional military education and leader development. Many of the changes came as a result of the ongoing implementation of the Professional Development of Officers Study (Bagnal Study), approved in May 1985, and the Leader Development Action Plan of April 1988. The Bagnal Study had been an analysis of officer professional development with particular concentration on education and training to the year 2025. The Leader Development Study had recommended a number of actions to institutionalize leader development efforts and provide a framework that would enable the Army to anticipate and accommodate change. Leader development continued to rest on the "three pillars" of military schooling, operational assignments, and self-development. During the year, TRADOC also responded to the changing threat, the need to emphasize readiness across the spectrum of conflict, and the reality that the Army of the future would be a smaller Army. As General Vuono and Secretary of the Army Michael P. W. Stone observed in their joint posture statement to Congress: "As force

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32. (1) Army Posture Statement, p. 83. (2) TRADOC ACH, CY 90, p. 123. (FOR OFFICIAL USE ONLY - Info used is not protected)

33. (1) Msg. Cdr TRADOC to distr, 102100Z May 91, subj: Warrant Officer Leader Development. (2) TRADOC ACH, CY 90, p. 123. (FOR OFFICIAL USE ONLY -- Info used is not protected)



reductions occur, the vital mission of developing quality officers assumes an even greater role in ensuring the Army's future success."<sup>34</sup>

One of the major recommendations of the Leader Development Action Plan had been that the Army make a firm commitment to the refinement and continued development of the Military Qualification Standards (MQS) system. As with a majority of the Army's current training programs, MQS was an outgrowth of the Review of Education and Training for Officers (RETO) Study of 1977 and the Professional Development of Officers Study of 1984-1985. The program made mandatory the teaching of common military skills and knowledge prior to commissioning, and was designed to standardize officer training throughout the Army. In 1991, TRADOC focused on tying MQS more closely to the aforementioned three pillars of leader development. Since the implementation of MQS I, precommissioning training, in 1984, a number of changes had been made to the program. A major revision had been the elimination of the five level program to a more manageable three levels. MQS I remained applicable to precommissioning, but MQS II was for company grade officers and MQS III for field grade officers as opposed to having a separate level for each grade.<sup>35</sup>

The military qualification standards program was, like the training programs for enlisted soldiers, progressive and sequential. The MQS system used manuals as a tool to support officer training and leader development. Each set of MQSs was divided into a military task component and a professional military education component. The former sought to teach the common skills and knowledge required at a particular grade level, while the latter focused on providing a foundation for future development responsibilities. The MQS program was also designed to insure that the efforts of school commandants, unit commanders, and individual officers were complementary. At the MQS II level, there was a manual of common tasks for all lieutenants and captains. There was also a manual of tasks for each branch. Distribution of MQS II common manuals began in January 1991, followed closely by distribution of the first of the branch manuals in March. MQS for field grade officers was still under development at the close of 1991. Development of a program for majors and lieutenant colonels was proving quite complex, because field grade officers MQS products had to be developed in five areas: common, branch, functional, joint, and acquisition.<sup>36</sup>

A new program for officer training was the Joint Professional Military Education program that began in June 1990. The purpose of the new program was to develop a nucleus of officers fully knowledgeable of the requirements of joint operations. The two-phase course built on the instruction in joint operations an officer received at

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34. TRADOC ACH, CY 90, pp. 123-24, 126. For a detailed discussion of officer education from precommissioning through the Army War College see TRADOC AHR, CY 88, pp. 122-28. For discussion of the background of the Leader Development Study and Action Plan, see TRADOC AHR, CY 88, pp. 128-31 and TRADOC ACH, CY 89, pp. 178-79 (All FOR OFFICIAL USE ONLY - Info used is not protected)

35. TRADOC ACH, CY 90, p. 128. (FOR OFFICIAL USE ONLY - Info used is not protected.)

36. Lt Col William A. Knowlton, Jr., "Military Qualification Standards: An Officer Leader Development Tool," Military Review, May 1991, pp. 34-41.

the Command and General Staff College. Phase one included the completion of training at an intermediate or senior level school such as the Army War College. That training was followed by either the intermediate or senior course at the Armed Forces Staff College. Students studied, among other things, joint and combined operations, joint doctrine, and joint planning. In FY 1991, 350 Army officers were scheduled to take part in the training for joint operations.<sup>37</sup>

In December 1990, General Foss established a fact-finding study group to look at ways the officer education system might be revised to meet the strains of severely reduced resources. One possibility the group looked at was the linkage of the Officer Advanced Course (OAC) and the Combined Arms and Services Staff School (CAS<sup>3</sup>). If such a system were adopted, an officer would attend the two courses without an intervening assignment. The study group believed there was considerable overlap in the POIs of the two courses which, respectively, prepared captains for company command and prepared captains for staff service at the battalion and brigade level. OAC was a 20-week course which included common and branch-specific instruction. CAS<sup>3</sup> was a two-phased course, phase one of which was completed as a correspondence course; phase two was offered as a resident course. The study group suggested that OAC and CAS<sup>3</sup> might be combined into a course that would take no more than twenty-nine weeks to complete and which would cost less to conduct. A problem with the concept was that CAS<sup>3</sup> students would no longer have the benefit of field experience. The study group completed its work in late February 1991 and shortly thereafter they briefed General Vuono. The Chief of Staff of the Army believed the concept had merit, but he put the project on hold. At the end of the year, no decision had been made as to the future of OAC and CAS<sup>3</sup>.<sup>38</sup>

Another important concept being studied at TRADOC headquarters in 1991 was the possibility of combining certain Officer Advanced Courses for branches with like battlefield functions. At the 1 May 1991 TRADOC Commanders' Conference, General Foss directed that the courses be combined to form "warfighter centers" that would provide a broader understanding of the combined arms team at company command level. The Infantry and Armor schools were directed to develop a pilot course for the second quarter of FY 1992. At the same time, CASCOT was directed to develop a pilot logistics course combining the transportation corps, ordnance, quartermaster, aviation logistics, missile and munitions and Army Medical Department courses. The Combined Arms Center recommended three combinations of courses worthy of further study: aviation and air defense artillery; infantry, armor, and aviation; and military police and chemical. To those, General Foss added field artillery and air defense artillery, and special operations and military intelligence.<sup>39</sup>

As with the traditional OAC, the combined course was to run for twenty weeks. The resident course would include a generic phase comprising subjects rela-

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37. Army Posture Statement, pp. 82-83.

38. (1) Briefing Slides, ODCST, February 1991. (2) Telephone conversation with Lt Col Reginald J. Foster, ODCST, 7 Apr 92.

39. (1) SSHR, ODCST, CY 91/I, p. 16. (2) Msg Cdr TRADOC to distr, 151830Z May 91, subj: Guidance for Development of Combined OAC.

tive to all students, the TRADOC common core, and a mission-specific phase designed for students from both branches. If required, the resident course structure could include a branch phase which would be targeted to branch students only. The usual OACs would continue while the pilot courses were being conducted. A decision to continue the pilots as the norm for OAC in the future would be made following a detailed analysis and assessment of their utility. The courses were to be developed by the TRADOC schools under supervision of the integrating centers. By the end of May, General Foss had decided that two pilot courses involving the infantry and armor courses would be tested--one at Fort Benning and one at Fort Knox. The reason for that arrangement, at least in part, was to quiet concerns that one branch might be "subordinated" to the other.<sup>40</sup>

That then was the plan. The combined infantry and armor OACs were scheduled to take place from 27 January to 16 June 1992. Meanwhile CASCOM continued to develop a combined logistics course to begin on June 29 1991 at Fort Lee. Chief of Staff of the Army, General Carl E. Vuono, appears to have supported these pilot courses as a way of providing future company commanders experience in combined arms maneuver. However, after General Gordon R. Sullivan replaced Vuono on 23 June 1991, he decided to discontinue the program. However, when the CASCOM commander briefed the concept for the combined logistics course to General Sullivan in December 1991, he fully endorsed that project and requested that TRADOC consider running two pilots instead of one. At the end of the year it appeared the combined logistics course would begin as scheduled.<sup>41</sup>

Operations Desert Shield and Desert Storm caused a large number of Army officers to defer needed schooling. Even before the beginning of the ground war, the Total Army Personnel Command claimed that about 35 percent of officers eligible for their branch advanced course could not attend because of their deployment to the Persian Gulf. Ninety-seven selectees for the senior service schools, 130 for the CGSC, and more than forty officers for the CAS<sup>3</sup> resident phase were forced to withdraw before completing the training. As of the last of March 1991, PERSCOM believed that the process of getting officer school scheduling back to normal would likely take a year to sixteen months. Meanwhile, the Army would take measures to see that Operations Desert Shield and Desert Storm veterans were not penalized by promotion boards.<sup>42</sup>

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40. (1) TRADOC Historical Research Collection, Fort Monroe, Va. (2) Msg. Cdr TRADOC to distr. 151830Z May 91, subj: Guidance for Development of Combined OAC, Doc IV/7. (3) Msg. Cdr TRADOC to Cdr USAARMC. 311300Z May 91, subj: Guidance for Development of Combined OAC, Doc IV/8. (4) Briefing Slides, ODCST, [Combined OAC], n.d., [1991] Doc IV/9. (5) Briefing Slides, Gen Steele to Gen Foss. 26 Jul 91, [Combined OAC], Fort Monroe, Va., Doc IV/10.

41. SSHR, ODCST, CY/II, pp. 14, 57.

42. (1) The Lamp, Fort Leavenworth, Kan., 29 Mar 91. (2) Msg. HQDA to distr. 120050Z Feb 91, subj: Officer Professional Development School Attendance, Doc IV/11.

In another Operation Desert Shield and Desert Storm-related action, the Army Chief of Staff directed that assignments of soldiers and officers returning from the Persian Gulf be handled carefully so that the Army school system could take full advantage of their combat experience. He was especially concerned that officers and NCOs be assigned as small group instructors and platform instructors, at the CGSC, CAS<sup>3</sup>, the Army War College, and in NCOES.<sup>43</sup>

### **Special Training Programs**

#### **Army Physical Fitness Program**

Early in 1989, General Maxwell R. Thurman, then TRADOC commander, had assigned the director of the Army Physical Fitness School at Fort Benjamin Harrison to develop a program whereby a master fitness trainer course could be incorporated into the officer and noncommissioned officer programs of instruction. The Fitness School proposal included 130 hours of instruction with blocks for the NCO Primary Leader Development Course, ROTC and OCS, BNCOC, and ANCOC. The plan was scheduled for implementation at the precommissioning level in October 1990, and on 1 August 1989 General Thurman had signed a policy memorandum to that effect. However, by December 1989, his successor, General John W. Foss, had rescinded the memorandum and directed that a reduced program of 46 hours be developed. Then, in 1991, the VANGUARD Study directed that the Physical Fitness School be closed, and in February 1991 the Army Chief of Staff approved closing down instruction. As a result, all Master Fitness Trainer Courses were canceled after 1 October 1991. The Chief of Staff of the Army also approved the TRADOC commander's request that the school be reduced to fifteen spaces for purposes of physical fitness proponentcy, including doctrine, research, advice to units, and the development of fitness standards for the Army. General Foss directed that the Physical Fitness School be moved to Fort Benning and placed under the U.S. Army Infantry Center, beginning in FY 1992.<sup>44</sup>

In April 1991, General Foss responded to the concerns of the commandants of the Field Artillery, Air Defense Artillery, and Engineer Schools about the changes in the physical fitness program and a directive that fitness trainer instruction be integrated into the physical training and administrative training hours of OBC and OAC. Foss asked the Fitness School to make its staff available to the commandants to work out the details of a program to integrate the required hours of physical training instruction into the courses without requiring an increase in existing POI hours. In

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43. Msg. HQDA to Cdr TRADOC and Cmdt USAWC, 251400Z Apr 91, subj: Desert Storm Experience for Army School System, Doc IV/12.

44. (1) Msg. Cdr TRADOC to distr, 021411Z May 91, subj: Cancellation of Master Fitness Trainer Course, Doc IV/13. (2) SSHR, ODCST, CY 91/I, p. 18. (3) TRADOC ACH, CY 90, p. 134. (FOR OFFICIAL USE ONLY - Info used is not protected)

addition, the Fitness School developed a "train-the-trainer" workshop designed to train school personnel to administer the program.<sup>45</sup>

Beginning in October 1985, initial entry trainees who could not meet physical standards had been enrolled in fitness training units (FTU) to bring their conditioning to a level satisfactory for entry into BCT or OSUT. By the end of 1991, more than 42,000 trainees had entered the three-week program and approximately 93 percent had successfully completed the course. Of those, 90 percent had successfully completed BCT or OSUT. However, when the Army Audit Agency (AAA) reviewed the fitness training unit program at Fort Jackson, it concluded that the cost of the program was not justified by the results. As a result, the TRADOC Management Engineering Activity (TRAMEA) recommended the program be eliminated. During 1991 the TRADOC Deputy Chief of Staff for Training opposed that action on the grounds that FTUs protected the Army's investment in new soldiers. His recommendation was that if FTUs were removed from the Army training centers, then the physical fitness screening test should become a part of the recruiting process.<sup>46</sup>

### **Security Assistance Training**

The Security Assistance Training Program provided a substantial portion of military training assistance provided to allied and other friendly foreign nations in the continental United States and overseas. Additionally, security assistance channels were used to provide counternarcotics training and training under the Presidential Determination (506A) Authority to international students. Those programs assisted them in developing the skills necessary for effective operation of weapons and equipment transferred or sold through the foreign military sales program. Security assistance training also enabled friendly nations to improve the management of their defense establishments, promoted military professionalism, assisted in disaster relief and civil preparedness, supported peacekeeping operations, and enabled the United States to continue to establish valuable friendships and channels of communication with foreign governments and military forces. That was accomplished through formal training courses in the United States, on-the-job and observer training, mobile training and survey teams, and special training conducted as directed by the Department of the Army, overseas or in the United States. TRADOC was the executive agent for Army security assistance training, with the Security Assistance Training Directorate of the Office of the Deputy Chief of Staff for Training responsible for policy issues. The Security Assistance Training Field Activity (SATFA), located in Hampton, Va., was responsible for managing and administering the program. TRADOC officials involved in security assistance training were convinced that the program had become increasingly important within the overall context of foreign policy as the drawdown of the Army continued.<sup>47</sup>

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45 Msg. Cdr TRADOC to distr. 041321Z Apr 91, subj: Physical Fitness Education in TRADOC Professional Development Schools. Doc IV/14.

46 (1) SSHR, ODCST, CY 91/I, p. 3. (2) TRADOC ACH, CY 90, p. 135. (FOR OFFICIAL USE ONLY - Info used is not protected)

47. TRADOC ACH, CY 90, pp 135-36. (FOR OFFICIAL USE ONLY - Info used is not protected)

In FY 1991, more than 125 foreign countries participated in CONUS security assistance training. During Operations Desert Shield and Desert Storm, S.TFA and the Security Assistance Management Office at Fort Bragg rapidly deployed teams to support the Royal Saudi Arabian Land Forces, the Saudi Arabian National Guard and other coalition forces. In support of United States troops, international military students (IMS) at several U.S. Army training installations conducted briefings on Saudi Arabia and other Middle Eastern countries for American troops deploying to that area.<sup>48</sup>

During January and February 1991, TRADOC trained three groups of Kuwaiti students who were attending colleges and universities in the United States, to serve as interpreters with U.S. Army units serving in the Persian Gulf area. Ultimately, a total of 600 Kuwaiti students deployed to the theater of operations. The first group of 292 students was trained at Fort Dix by drill sergeants from the 3rd BCT Brigade and members of the 306th Military Intelligence Battalion from Fort Devens, Mass. Training included M-16 familiarization, NBC exercises, first aid, field sanitation, desert survival, an introduction to signal intelligence, and equipment and military language familiarization. The training began on 7 January and was completed on 14 January, after which the students deployed from McGuire Air Force Base to join United States units. A second group of students, smaller than the first group, was trained at Fort Devens in the same program of instruction beginning on 28 January. Beginning on 14 February, a third group of 269 Kuwaiti students was again trained at Fort Dix. This time the type of training was more closely aligned to the specific unit of assignment. For example, students being assigned to duty with hospital units were trained by mobile training teams from the Academy of Health Sciences. Those assigned to military police units were trained by representatives of the Military Police School. This last group of students deployed to the Persian Gulf on 26 February 1991.<sup>49</sup>

In the spring of 1991, a U.S. Army Technical Assistance Field Team (TAFT) provided basic combat training to seventy-five female soldiers from the United Arab Emirates (U.A.E.). Maj. Gen. Craig A. Hagan, TRADOC Deputy Chief of Staff for Training, termed the training, an "unqualified success" and the team was extended for a second year. Maj. Gen. Hagan observed that "considering the uniqueness of this training effort and the cultural need for separate female training, it is understandable that additional training support from the U.S. is required to institutionalize the skills taught by the TAFT." At the same time, he warned that the mission of the team was one of assistance. The aim of security assistance in this instance was to promote self-sufficiency in the host country by training a basic core of female cadre who would then do the training themselves. United States personnel should not "simply substitute for the lacking of skills in a country." Based on the success of

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48. SSHR, ODCST, CY 91/I, p. 62.

49. SSHR, ODCST, CY 91/I, pp. 8, 63.

the TAFT in training the U.A.E. soldiers, Kuwait requested and received briefings on the training concept employed.<sup>50</sup>

Changes in the United States' security assistance program reflected changes in world politics. During 1991, Czechoslovakia, Hungary, and Poland were authorized International Military Education and Training (IMET) funds to send students to the U.S. Army War College. Poland also sent a student to the Command and General Staff College course. Sanctions imposed on the IMET Security Assistance Training Program for Qatar, Chile, and Haiti were lifted. Chile planned to use its funds to send 35 officers to the School of the Americas. IMET security assistance was suspended for Peru, Sudan, Somalia, Jordan, Pakistan, Yemen, and Thailand. The Armor and Ordnance schools began developing a "Saudi unique" training program to support the M1A2 Abrams tank sale to Saudi Arabia. The cost of training approximately 180 Saudi Arabian students was expected to exceed \$55 million. All students would attend forty-five weeks of English language training at the Defense Language Institute English Language Center, beginning with the first group in July 1992. The students would serve as cadre in Saudi Arabian schools and assist the TAFT and General Dynamics Land Systems personnel in fielding the tanks.<sup>51</sup>

In an effort to streamline security assistance processes and procedures, the Defense Security Assistance Agency formed a team to study the consolidation of the security assistance training management organizations of the three United States' military services. The study group concluded that implementing additional efficiencies within the existing system was preferable to constructing a tri-service organization.<sup>52</sup>

#### **Helicopter School of the Americas**

On 28 May 1991, the TRADOC commander, the Aviation Center commander, and the commandant of the School of the Americas (SOA) signed a memorandum of agreement which merged the Aviation Center's Latin American helicopter training effort under the SOA. The Helicopter School of the Americas was activated on 2 December 1991 at Fort Rucker. The school's mission was to train members of the armed forces of Central and South America in basic and advanced helicopter flight and maintenance. The training would be offered in the Spanish language. Eight flight training courses, six in the UH-1 Huey and two in the UH-60 Black Hawk, were in the inventory of planned courses. Maintenance training would be available beginning in FY 1993. To augment the staff at Fort Rucker, the commander issued a call for bilingual guest instructors from Central and South America.<sup>53</sup>

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50 (1) Msg, Maj Gen Craig A. Hagan to distr, 211227Z May 91, subj: Personnel Resourcing of Training Teams, Doc IV/15. (2) SSHR, ODCST, CY 91/I, p. 63.

51. SSHR, ODCST, CY 91/I, pp. 63-64; CY 91/II, pp. 77-78.

52. SSHR, ODCST, CY 91/II, p. 75.

53. (1) SSHR, ODCST, CY 91/I, p. 43; CY 91/II, pp. 17, 78. (2) Msg, Cdr Fort Rucker to distr, 191300Z Apr 91, subj: Guest Instructors for Army Helicopter School of the Americas, Doc IV/16.

### **Special Operations Forces Language Training**

In October 1991, TRADOC, the Defense Language Institute Foreign Language Center (DLIFLC), and the Special Warfare Center and School (SWCS) entered into a memorandum of agreement for DLI support to the Special Forces Language Program. Under the terms of the agreement, SWCS would pay DLIFLC approximately \$8 million for course development, test development, development of computer-based exportable training materials, and program evaluation in thirteen languages. The new programs would make extensive use of computer-based technology, including voice recognition technology. While there seemed little doubt as to the need for such a program, DLIFLC was concerned that without the authority to hire additional personnel, it would be unable to execute all aspects of the SOF project.<sup>54</sup>

The Defense Language Institute Foreign Language Center provided extensive language training support to Operations Desert Shield and Desert Storm, most of it improvised and on very short notice, to help compensate for the shortage of Arab and Iraqi linguists in the field. In the months leading up to Desert Storm, the major problem was not the challenge to the training base, but rather the inability of the field to define its needs and to provide soldiers for training. Training in Arabic and the Iraqi dialect was increased both at the Presidio of Monterey and at DLI in Washington, D.C. A number of special courses of varying lengths were developed. Course length depended on the availability of soldiers for training rather than proficiency desired. DLIFLC rapidly developed video tele-training capability and used it to provide training to deploying units at Forts Campbell, Hood, and Riley. The Institute's support included on-site training, video-taping, and distributing orientation courses in the Iraqi dialect, arranging training through the British Defense School of Languages, assisting in the establishment of unit language training programs in Saudi Arabia, and distribution of Arabic material, particularly a newly developed Cultural Orientation Program-Gulf North.<sup>55</sup>

### **TRADOC Counter-Drug Training Assistance Program**

Early in 1989, the federal Drug Enforcement Administration (DEA) had requested that the Army assist it in developing and executing a training program for Operation SNOWCAP, a paramilitary operation designed to reduce the illegal flow of drugs out of the source countries. The Army developed and assumed responsibility for six courses, the first three of which were conducted in the Ranger Training Brigade at Fort Benning beginning in mid-1989. Volunteer agents were determined based on their successful completion of a one-week selection course which included psychological, physical, and leadership testing conducted primarily by DEA staff personnel. Students who passed the selection stage went on to an eight-week basic course where they learned the basic military skills necessary for Operation SNOWCAP. Those skills included leadership, teamwork, tactical skills, weapons handling, and navigation skills. After one or more deployments to host nation countries, agents identi-

54 (1) SSHR, ODCST, CY 91/II, p. 21 (2) Msg. Cmdt DLI to distr. 232100Z Apr 91, subj. Hiring Authority for DLIFLC to Execute Special Forces Language Initiative, Doc IV/17

55 SSHR, ODCST, CY 91/I, p. 16.



fied as having leadership potential attended a six-week team leader course designed to train agents in the critical command and control functions necessary to plan, coordinate, conduct, and supervise SNOWCAP operations. The remaining three courses were oriented to medical, communications, and intelligence skills.<sup>56</sup> All counter-drug training expenses were met from a Department of Defense account.

On 18 September 1989, the Secretary of Defense had issued guidance which established a strategy for attacking the flow of drugs at every phase--at the source, in transit, and in the United States. That guidance assigned the detection and countering of production, trafficking, and use of illegal drugs as "a high priority national security mission of the armed forces." To implement the Secretary's guidance, the Army Staff developed an Army Counternarcotics Plan, which Secretary of the Army Stone and Chief of Staff Vuono signed on 17 April 1990. The Army pledged to provide support, from the full spectrum of its capabilities, to a wide range of drug law enforcement agencies, including cooperating foreign governments.<sup>57</sup>

In June 1991, on his third day as Army Chief of Staff, General Gordon R. Sullivan sent a message to the field to clarify his position on what the Army's role should and would be with regard to the Army's counternarcotics mission:

Fundamental roles and missions for the Army . . . will not change. The Army is not, nor will it become, a law enforcement agency (LEA). Army activities will comply with the Posse Comitatus Act, the Foreign Assistance Act, the Arms Export Control Act, and other laws. International activities will be conducted under the operational command of combatant commanders.

Sullivan went on to outline at length what the Army's role should be. In general, he expected the Army to identify training opportunities for drug enforcement agencies that simultaneously enhanced Army readiness. The Army was to define technologies which would assist the agencies to perform their roles. Troop support was to be nonoperational. Sullivan then announced that the Army's Counternarcotics Plan would be updated as AR 500-XX, Support to the National Drug Control Strategy.<sup>58</sup>

In 1991, the Ranger Training Brigade conducted one each of the aforementioned courses, as well as a special operations course for selected counter-drug agents from the Department of the Interior, the U.S. Customs Service, the U.S. Forest Service, and the U.S. Marshalls Service Special Operations. At the end of the year, the Operation SNOWCAP agents were preparing to deploy to South America to work with host nation military and paramilitary counter-drug forces. DLIFLC provided language support to a large number of counternarcotics law enforcement agencies. The

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56 TRADOC ACH, CY 90, p. 138. (FOR OFFICIAL USE ONLY - Info used is not protected)

57 Msg. HQDA to distr. 261720Z Jun 91, subj. Army Support to National Drug Control Strategy, Doc IV/18.

58 Ibid. Sullivan also directed that the term would be "counter-drug," not "counternarcotics," because the largest problem, cocaine, was not a narcotic.

Military Police School planned to send forty mobile training teams to twelve different states for the purpose of training state and local counter-drug law enforcement officers in a variety of counter-drug law enforcement skills.<sup>59</sup>

### **Environmental Training**

A new initiative in 1991 was the development of the Army Environmental Training Master Plan by the U.S. Army Toxic and Hazardous Waste Agency. In response to the plan, coordination was initiated between elements of the Office of the Deputy Chief of Staff for Training and the TRADOC Office of the Engineer to establish a closer working relationship between them with regard to environmental issues with training impact. Work was begun on a TRADOC Environmental Training Plan to provide guidance and policy to the TRADOC schools and installations. TRADOC action officers were writing a draft memorandum of agreement between the U.S. Army Corps of Engineers and the command to establish relationships and procedures for the development and execution of environmental training. In the future, an Army Master Environmental Training Plan would integrate environmental training throughout the Army.<sup>60</sup>

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59 (1) SSHR, ODCST, CY 91/I, p. 7; CY 91/II, p. 6. (2) Briefing Slides, ODCST Quarterly Update to the Chief of Staff, 3 May 91. (3) Briefing Slides, [Drug Control], Liaison Officer's Conference, 25-30 Aug 91, Hampton, Va., Doc IV/19.

60 SSHR, ODCST, CY 91/II, p. 23; CY 91/II, p. 164.



## Chapter V

### TRAINING SUPPORT

#### Introduction

In 1991, TRADOC personnel who were responsible for the development of training strategies and programs continued to face the question of how to maintain soldier and unit readiness at lower costs. The funding levels available during the year promised to be even more meager in the future. The Army's new Chief of Staff, General Gordon R. Sullivan, saw the challenge as one of "keeping the effectiveness on the upswing" as the Army drew down in size to meet President George Bush's goal of a 25 percent reduction in military forces. Sullivan believed the secret was continued strength through training. For TRADOC's training developers and managers the question was how to make the best possible use of training programs and systems already in place while taking on new initiatives to insure that the quality of training would not suffer. Increasingly, environmental concerns, safety, and the unavailability of adequate land for training on systems with greatly extended range, accuracy, and lethality would drive the search for more and better ways to employ rapidly advancing technology. It was clear that TRADOC and the Army had to have master plans to guide the development of training systems in the future. Comprehensive training strategies would increasingly have to replace the expedient solving of training problems and issues.<sup>1</sup>

Within the evolving architecture of the Combined Arms Training Strategy (CATS), TRADOC planners, in their search for alternate training strategies for institutions and units, looked increasingly to training aids, devices, simulation, and weapons simulators. In the future, to support Total Army Training Strategies, much greater reliance would be placed on the more effective use of artificial intelligence, satellite and video conference networks, digital image and laser technologies, and "embedded" and "distributed" training. The central question was how to achieve an effective and complementary mixture of simulated and field training exercises. Training delivery to individuals and units would become more decentralized as training development became more centralized. As the year drew to a close, TRADOC was in the midst of an era of unprecedented change. The command saw its training mission as that of the continued development of a training system to tie together the introduction of new equipment, new doctrine, and new organizational structures. To design a system that worked in the face of increasing manpower and budget reductions was the challenge for the future. CATS would be the "Total Quality Management" approach to achieving this design.<sup>2</sup>

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1. Army Times, 15 Jul 91 (quotation).

2. TRADOC ACH CY 90, p. 149. (FOR OFFICIAL USE ONLY - Info used is not protected)

## The Combat Training Centers

Development of the National Training Center (NTC) beginning in the mid-1970s, the Joint Readiness Training Center in the mid-1980s, and the Combat Maneuver Training Center (CMT) and the Battle Command Training Program in the late 1980s represented the most ambitious and costly training initiatives in peacetime U.S. Army history. The increased range and speed of new weapons systems, safety and environmental concerns, the need to train both light and heavy forces in a realistic fashion, and the need for command and control training led to the development of the new training systems. In addition, ever-increasing fiscal and environmental constraints on military programs threatened to decrease opportunities for realistic home station training. Thus the urgency to establish large, centralized training areas or programs gave birth to the combat training center program. In 1991, TRADOC training developers looked especially to the NTC, JRTC, and the CMT to provide the realism in a total training program that would in the future be heavily based on simulation. By 1991 the CTCs had at once become a principal training resource area and, in fact the capstone training events of CATS.<sup>3</sup>

In May 1987, the four programs mentioned above were brought under a single training "umbrella" and became known as the Combat Training Centers, or CTC. Those projects, which focused on integrating all elements of combat power, encompassed three instrumented tactical field sites and a wargaming program. Collectively, the CTCs were designed to provide tough, realistic combined arms and services training in accordance with AirLand Battle doctrine, for leaders and units from squad through corps. When the centers were fully operational, the Army would have the capability to train heavy, light, and special operations forces across the spectrum of conflict. The Combat Training Centers also provided, through the Center for Army Lessons Learned (CALL) at the Combined Arms Command, a means of collecting and analyzing data concerning battlefield performance and the effectiveness of training under simulated conditions. Such data, Army officials believed, could provide a source of guidance for the development of training systems and doctrine, force structure, and equipment requirements throughout the Army. To chart a course for the CTC program from 1990 to FY 2000, General Carl E. Vuono, then Chief of Staff of the Army, approved a CTC Master Plan which established a centrally managed program and identified the future training strategy and objectives necessary to support the program to the turn of the century. Vuono believed the existence of a single plan would provide cohesion and improve communications between the major commands involved in the program. The CTC Master Plan would be updated biennially and became one of the principal training resource master plans of CATS.<sup>4</sup>

The Training and Doctrine Command was the executive agent for the four programs that made up the CTC program. As such, the command's mission was to

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3. Detailed discussions of the development of the combat training centers may be found in previous TRADOC Annual Historical Reviews and Annual Command Histories. Classification ranges from SECRET to FOR OFFICIAL USE ONLY.

4. TRADOC ACH, CY 90, p. 151. For a detailed discussion of the development of the CTC Master Plan, see TRADOC ACH, CY 89, pp. 201-02. (Both FOR OFFICIAL USE ONLY -- Info used is not protected)

develop, coordinate, integrate, and oversee the execution of policies, plans, and programs for the CTCs. TRADOC also monitored the execution of the missions of other major commands at the CTCs. In addition, the command was responsible for the acquisition and certification of the observers and controllers who refereed the force-on-force maneuvers and conducted the after action reviews for the rotating units. Insuring the doctrinal accuracy of the battlefield was also a TRADOC function.<sup>5</sup>

The program that provided for the planning, development, and maintenance of training devices and instrumentation for the CTCs was the Collective Training Instrumentation and Engagement System, or CTIES. The personnel who supported the CTIES mission were the Army proponent for concept development for force-on-force tactical engagement simulation. They also provided the technology to simulate, record, and analyze battle events during combined arms training. Until 1991, the CTIES function rested with the Office of the Deputy Chief of Staff for Training through the Army Training Support Center at Fort Eustis, Va. During the year, the CTIES program function was transferred to the Combined Arms Command-Training at Fort Leavenworth, Kan. However, the personnel remained physically located at Fort Eustis.<sup>6</sup>

The opposing forces (OPFOR) at the CTCs provided much of the realism in training that was the goal of the program. CTC developers had chosen as the model for this force, the Soviets and their doctrine. Since the early 1980s, the OPFOR program had matured, paralleling the development of Soviet tactical doctrine and the Army's experience with how soldiers learned. By 1991, with the warming of relations between the new Russian and American governments, and the dissolution of the Warsaw Pact and the shifting of NATO's focus from that traditional threat, the OPFOR program had reached a crossroads. What kind of force should the opposing forces replicate in the future? What should be their doctrine, their equipment, their organization? If Soviet-based doctrine was no longer suitable, should doctrine developers look to a comprehensive, nonpolitically sensitive, or generic doctrine? Perhaps Soviet doctrine was still suitable, in view of the fact that many potential enemies had adopted Soviet doctrine and owned Soviet equipment. What about the U.S. Army's own AirLand Battle doctrine? That approach might help reveal the strengths and weaknesses in our own doctrine, but should Blue Force units fight against their own doctrine? That approach brought up the question of equipment. AirLand Battle doctrine was dependent on the force modernization that had occurred over the past decade. Should the OPFOR have the same M1 Abrams tanks, M2

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5. (1) Briefing Slide, Combat Training Center Program, TRADOC Liaison Officers Conference, 26-30 Aug 91, Hampton, Va. (2) A detailed discussion of the make-up, functions, and training of the observer/controllers at the CTCs may be found in previous editions of the TRADOC Annual Command Histories and the TRADOC Historical Reviews. Classification ranges from SECRET to FOR OFFICIAL USE ONLY.

6. Briefing Slides, CTIES, TRADOC Liaison Officer's Conference, 26-30 Aug 91, Hampton, Va.

Bradley fighting vehicles, AH-64 Apache helicopters, and high mobility multipurpose wheeled vehicles (HMMWV)?<sup>7</sup>

Perhaps a generic doctrine would fit the bill. That approach by implication would mean that it would be an inferior doctrine, if U.S. forces continued to believe that AirLand Battle doctrine was superior to any other. Testing of such a doctrine raised other questions. What would be the criteria? In addition, what sources could be used to make revisions? One suggestion was that the United States use, as did many smaller and Third World nations, a combination of Soviet and British doctrine. At the end of the year, the debate went on.<sup>8</sup>

Meanwhile, in a related action, scenario development continued for the CTC program. One of the most recent revisions to the CTC Master Plan had added additional training for light battalions along with heavy forces. In the spring of 1990, General Vuono had tasked TRADOC to "develop and certify 'baseline' CONOPS [contingency operations] scenarios for SWA [Southwest Asia], LATAM [Latin America], Far East, and developing nations." In August 1991, shortly before retiring as TRADOC commander, General Foss had directed the Deputy Chiefs of Staff for Training and Concepts, Doctrine, and Development to develop one standard corps-level scenario for each of the five unified commands whose responsibilities were based on a general geographic area. Those scenarios would then be the basis for derivative combat development scenarios, teaching scenarios, and scenarios for the CTCs. At the end of the year, the European scenario and two scenarios for Southwest Asia had been approved. The Latin American scenario was awaiting approval. The scenarios for Northeast Asia and the Atlantic Command were not scheduled for completion until early in 1992. Each of the scenarios included, or would include, at a minimum, geographic setting, time frame, blue and red forces, the general situation, and a specific situation and mission. General Foss warned that "it is imperative that Army proponents not invent unique scenarios which highlight their own capabilities and deficiencies to the exclusion of all others. However, there must be room to tailor the scenarios to ensure that the proper mission and issues are addressed."<sup>9</sup>

Radio and radar frequency spectrum management was a concern to the Army wherever radios were used. Policies were in effect to address the problem, but they were often outdated, as more powerful and sophisticated radio systems were fielded. That was especially true of the CTCs, and more especially of the NTC. During the development stages of the National Training Center, TRADOC planners had had to deal with the National Aeronautics and Space Administration's concern that electronic warfare play would interfere with the signal at its Goldstone Space Tracking Station,

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7. This section on the OPFOR is based on an article by Col Pat O'Neal, commander of the 177th Armored Brigade, one of the OPFOR units at the National Training Center, Fort Irwin, Calif. The article appeared in Army magazine, Dec 1991, pp. 10-12.

8. Ibid.

9. (1) Msg. TRADOC Cdr to distr, 030845Z Oct 91, subj: Training and Teaching Scenarios, Doc V/1. (2) TRADOC ACH, CY 90, p. 153. (FOR OFFICIAL USE ONLY -- Info used is not protected)

located on the southwest corner of Fort Irwin. TRADOC, the command responsible for electronic warfare play at the NTC, had negotiated a memorandum of understanding with NASA, the Navy, the Air Force, and the Office of the Secretary of Defense, to govern all electronic activities in the Mojave area so as to permit compatible operations by NASA and all the services.<sup>10</sup>

Late in October 1991, the issue of spectrum management throughout the Army, but especially at the CTCs, became a major concern, primarily with regard to responsibility. The problem seemed to be that Forces Command (FORSCOM), the U.S. Army Information Systems Command (USAISC), and TRADOC could not agree as to where mission responsibility should lie. TRADOC had placed the burden of spectrum management at the CTCs on the Collective Training Instrumentation and Engagement Systems (CTIES) agency at the CAC-T. The CTIES agency objected that it should not have to bear that burden. Meanwhile the USAISC had been assigned to provide automation to assist in spectrum management at the large training centers. The Information Systems Command questioned why it should fund specialized requirements to support training. Specifically at issue was the Spectrum Monitoring Engineering and Control System (SMECS), a computer-driven system which USAISC claimed it would not purchase for a typical post. Fort Irwin, however, with its Goldstone Space Tracking Station was not a typical post. Headquarters Department of the Army recommended TRADOC-CTIES and USAISC work out a cost-sharing plan to be applied on a case-by-case basis with regard to the CTCs. The CTIES planners again objected that spectrum management at the CTCs should not be a TRADOC mission, on grounds that TRADOC did not have the proper credentials and should play only a support role.<sup>11</sup>

Two weeks later, Headquarters, Department of the Army, stated its position in a message to the CTIES organization. Spectrum management officials at that level reminded the CTIES planners that "although specialization varies by echelon, every Army operator, developer and trainer has some obligations under our centralized management but decentralized execution concept." Further, the predominant materiel developer for frequency management for new equipment was the U.S. Army Materiel Command (AMC). AMC had delegated that responsibility to the U.S. Army Communications and Electronics Command (CECOM). The CTIES agency was "complicating its own frequency support by not participating with CECOM during formative stages of frequency identification." At the end of the year, a memorandum of understanding was being coordinated that would define the various responsibilities for frequency management. That memorandum stated that TRADOC was "to ensure that electromagnetic compatibility (for training devices) at each CTC be fully considered for new

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10. Anne W. Chapman, The Origins and Development of the National Training Center, 1976-1984, Ft. Monroe, Va., HQ TRADOC, 1992, p. 30.

11. (1) Msg. HQDA to distr. 042104Z Oct 91, subj: Support of Spectrum Management Missions at Combat Training Centers, Doc V/2. (2) Msg. Cdr USACAC-Tng to distr. 211047Z Oct 91, subj: Support for Spectrum Management Missions at Combat Training Centers, Doc V/3. (3) Msg. Cdr USACAC-TNG, 281647Z Oct 91, subj: Support of Spectrum Management Missions at Combat Training Centers (CTC), Doc V/4.



acquisitions prior to obligation of funds." Accordingly, CTIES planners should coordinate their requirements for frequency support with CECOM.<sup>12</sup>

Late in 1990, CAC-T had established a "Combat Training Center review program" to centralize management of five separate but related CTC programs involving TRADOC. One of the programs, sponsored by the Center for Army Lessons Learned, was known as "focused rotations." That program allowed up to ten subject matter experts (SME) from one or more proponent schools to visit one of the Combat Training Centers during a standard rotation to collect and assess data for a specific area of interest or issue. Most often the SME visits were for the purpose of verifying research or validating emerging doctrine. Another program, under the auspices of CAC-T, allowed one SME per school to visit a CTC annually to examine the application of doctrine in scenarios and in the field. A third program, sponsored by the Threat Directorate at CAC, allowed SME teams to visit one CTC per quarter to validate the portrayal of threat tactics by observation and critique of OPFOR operations. A fourth program, funded and coordinated by each TRADOC school, made it possible for assistant school commandants to visit CTCs for the purpose of insuring that lessons learned were being integrated into developing doctrine, organizations, equipment, and school curricula. Finally, there were the quarterly reviews, coordinated by CAC-T. That program sent representatives from Headquarters Department of the Army, TRADOC, CAC, each CTC, sponsoring major commands, and TRADOC integrating centers and schools to quarterly meetings to discuss and resolve CTC program issues. All these programs were part of the continuing effort to capture CTC lessons learned and to disseminate them throughout the Army.<sup>13</sup>

### **The National Training Center**

As the U.S. Army's National Training Center at Fort Irwin in California's high desert region celebrated its tenth anniversary, the Army and the nation had reason to celebrate the continued development and success of the 1,000 square mile training area. A majority of the combat troops deploying to the Arabian peninsula in Operations Desert Shield and Desert Storm had already experienced "war" in the desert because of their training at the NTC. At the jointly developed TRADOC-FORSCOM facility, soldiers were trained for war in a setting as close as possible to the reality of combat. Training exercises for battalion level armor and mechanized infantry units included highly realistic live-fire exercises and force-on-force engagements in which they were confronted with an opposing force (OPFOR) schooled in Warsaw Pact tactics and doctrine. Full combined arms operations were supported by U.S. Air Force close air support, laser-based engagement simulation, and a core instrumentation subsystem. Those elements provided a degree of realism in casualty assessment second only to actual combat. To the Training and Doctrine Command fell responsibility for the operation and maintenance of a realistic training and evaluation environment and the upgrading, operation, and maintenance of the instrumentation system. The TRADOC operations group at the NTC provided observer-controllers for the train-

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12 Msg. HQDA to distr. 131705Z Nov 91, subj: Support for Spectrum Management Missions at Combat Training Centers, Doc V.5.

13 Msg. Cdr USACAC to distr. 061937Z Aug 91, subj: Combat Training Center (CTC) Review Program Schedule FY 92, Doc V.6.

ing exercises and after-action reviews that pointed out a unit's strengths and weaknesses in carrying out a variety of combined arms missions. The Center for Army Lessons Learned was charged with the collection and analysis of NTC data and the distribution of essential lessons learned during exercises conducted at Fort Irwin. To the Combined Arms Center fell the task of developing threat-based training tasks, conditions, and standards. Each rotating unit received a "take home package (THP)" as a record of its performance and to aid in improving its training at home station.<sup>14</sup>

In the early part of the year, operations at the NTC were significantly affected by Operations Desert Shield and Desert Storm. Five rotations had to be canceled as units deployed to the theater. Training was planned and conducted for three Army National Guard roundout brigades: the 48th Infantry Brigade from Georgia; the 256th Infantry Brigade from Louisiana; and the 155th Armored Brigade (Separate) from Mississippi. None of the roundout brigades deployed to the Persian Gulf with their parent divisions. In fact, the 256th's parent division never deployed, and their training was cancelled before it was completed. After the end of the Gulf operations, the NTC resumed a more normal schedule and trained five paired battalion rotations, an armored cavalry regiment, and a separate motorized brigade. Included was the first exercise of a division cavalry squadron.<sup>15</sup>

During 1991, FORSCOM fielded a new regulation, FORSCOM Reg 350-50, Training at the NTC, that had a major effect on the TRADOC Operations Group. Specifically, the regulation made allowances for the training unit to deploy assets in excess of the support capability of the operations group. In addition, a U.S. Army Force Integration Support Agency manpower survey mandated that the maximum authorized strength of the Operations Group be based on the deployed strength and task organization of a standard rotation. The survey also endorsed the use of augmentee observer-controllers, which FORSCOM would supply when excess requirements existed. At the end of the year, the CTC Directorate of CAC-T was drafting a memorandum to that effect.<sup>16</sup>

Efforts to move the NTC core instrumentation system equipment to a new and permanent operations facility had finally succeeded in mid-1990. Serious management, performance, and technical problems had delayed the move for several years. After acceptance testing, the new center was put into operation in September 1990. The expanded system possessed the capability to support more than 1,000 players and as many as three battalion after action reviews. It also had the capacity to integrate voice and video data, the lack of which had plagued data collection from the beginning. Enhancements were made to all other aspects of the instrumentation system except the Range Data Measurement Subsystem (RDMS) and the Spectrum Management Engineering and Control Subsystem. The upgrading of the RDMS and the placing of the position location function on the basis of the Global Positioning

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14. TRADOC ACH, CY 90, p. 155. (FOR OFFICIAL USE ONLY -- Info used is not protected)

15. SSHR, ODCST, CY 91/I, pp. 72-73; CY 91/II, p. 90.

16. SSHR, ODCST, CY 91/II, p. 90.

System rather than on the current triangulation method was planned for the future, but in mid-1991 remained unfunded. Also unfunded was the incorporation of the Single Channel Ground Airborne Radio System (SINCGARS) and the Multiple Subscriber Equipment (MSE) into the Range Monitoring and Control System (RMCS). During 1990, the observer-controllers at the NTC had tested an "electronic clipboard" which was a rugged computer that would allow them to more easily collect data. That project, too, remained unfunded.<sup>17</sup>

TRADOC continued to pursue the upgrading of the Multiple Integrated Laser Engagement System (MILES) so that the system could be used with the M1A1 Abrams tank which had just been fielded at the NTC. Since 1984, rotating armor units had used the M1 main battle tank. Meanwhile, Headquarters Department of the Army had granted authorization for the AH-64 Apache to fire Hellfire missiles at the NTC until such time as the MILES Air Ground Engagement System (AGES) was developed and successfully tested. That authorization, for 20 missiles per battalion was extended for FY 1992 as development continued on the MILES II-SAWE program, successor to the AGES. FORSCOM was strongly warned that the firing of the missiles was to be "tightly controlled to ensure relative performance data on both the missile and aircraft is captured."<sup>18</sup>

An ongoing concern for those responsible for spectrum management at the NTC was the ever-increasing military and civil congestion of the electromagnetic spectrum. The lack of agreement between TRADOC's CTIES agency and the U.S. Army Information Systems Command (USAISC) and the concern for the Goldstone Space Tracking Station has already been noted. Of special concern to USAISC was the simultaneous fielding of a number of new signal systems including the SINCGARS and the MSE. Successful frequency management and coordination was essential to insure that quality training and accurate instrumentation continued to exist. With fielding of the new radios, the existing signal operations instructions would become obsolete. The planned fielding of a Global Positioning System increased concerns that radio interference might prevent its proper functioning. The Army Spectrum Management Office was working with TRADOC to find an automated solution.<sup>19</sup>

Since early in 1989, the Army Materiel Command Project Manager for Training Devices (PM TRADE) in concert with the U.S. Army Training Support Center (ATSC), CATA, U.S. Army Tank-Automotive Command, the intelligence community, and several other agencies had considered alternatives for replacing the aging fleet of "surrogate"

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17. (1) TRADOC ACH, CY 90, p. 157. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) Briefing Slides, SAIC, n.d., [late 1991]. (3) Msg, HQDA to distr, 251315Z Jul 91, subj: Results of 23 July 91 Combat Training Center General Officer Executive Committee (CTC GOEC) Meeting, Doc V/7.

18. (1) Msg, HQDA to distr, 201235Z Sep 91, subj: MILES for NTC, Doc V/8. (2) Msg, HQDA to distr, 232150Z Jul 91, subj: FY 92 Hellfire Missile Allocation for NTC, Doc V/9.

19. (1) TRADOC ACH, CY 90, p. 158. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) Msg, HQDA to distr, subj: Direction Finding at NTC and JRTC, Doc V/10.

vehicles in use at the NTC with a newer fleet and one which would be less expensive to operate and maintain than the visually modified M551 Sheridan tank. Another requirement was that any new vehicle be able to carry dismounted infantry, which the M551 could not do. Although the Army Chief of Staff gave the project his approval, the exact type of vehicle to serve in that capacity had not been defined. At that time, agreement from virtually the entire Army leadership was that a wheeled vehicle should be the solution if it could adequately provide the mobility necessary. In 1990 strong support within the Army for the program continued, but as late as April, the project remained unfunded.<sup>20</sup>

Then on 12 April 1990, as a result of the Conventional Forces in Europe (CFE) treaty negotiations, the Army announced that more than 1,200 M113 armored personnel carriers would be returned from Europe to the United States. The Department of the Army designated 207 of them as OPFOR surrogate vehicles (OSV) and shipped the M113s to Red River Army Depot. The Threats Directorate at CATA and PM TRADE, working with the depot, developed a design and figured costs. Each modified vehicle would cost \$165,000, as compared to the \$600,000 to \$1 million for each new wheeled vehicle. When the plan was briefed to Maj. Gen. Jerome H. Granrud, the ARSTAF Assistant Deputy Chief of Staff for Force Development on 23 May 1990, the project was killed for lack of money. At that point, CAC began investigating the use of East German equipment. Most of it proved reliable, but not maintainable. Finally, in February and March 1991, CAC revised the M113 plan to focus on the BMP-2 and revived the program with Red River Army Depot to build and test prototypes which would be funded with CAC funds. The first M113-based prototype rolled off the production line in July 1991.<sup>21</sup>

When the modified M113s were fielded, the NTC would receive 159 with 30 in reserve. The JRTC would get 30 with 4 in reserve. The "BMP-2" would have a 30-mm. cannon, a smoke grenade launcher, five sets of road wheels, and would carry a crew of 3 with at least 5 dismounting soldiers. The developers were trying to acquire Bradley turrets for use on the M113. The new vehicle would be equipped with an upgraded version of MILES. Evaluation of the system was planned for the first quarter of FY 1992. Meanwhile, the NTC expressed some concern that the developers planned to use the M113A2 version of the system, which, it was believed, was slower than the M551. When the Army Chief of Staff was briefed, he agreed that the M113A3 would be better. In a related action to the OSV program, the NTC stopped work on a project to upgrade the M551 to resemble the BMP-2. The training center would continue to develop a prototype for upgrading the M551 to a T-80 tank configuration.<sup>22</sup>

In addition to the cancellation of some rotations and the training of the roundout brigades, already noted, Operations Desert Shield and Desert Storm had

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20. TRADOC ACH, CY 90, pp. 154-55. (FOR OFFICIAL USE ONLY -- Info used is not protected)

21. Briefing Slides, CAC Threats Directorate, The M113/BMP-1 OPFOR Surrogate Vehicle Program, 7 Jul 91.

22. Ibid

other effects on training at the NTC. During Desert Shield, the NTC OPFOR replicated a fictitious Middle Eastern army known as the Samaran Army. Their order of battle and organization was based on a document known as NTC Special Text (ST) 91-1, while their doctrine and tactics were based on Special Text 91-2. The Samaran Army portrayed a generic threat based on a synthesis of equipment available in the region and the methods used by those countries in combat. The information on threat came primarily from a document put together by a working group made up of representatives of the TRADOC Operations Group and the 177th Armor Brigade (OPFOR). Many of the tactical principles involved were British or Soviet in derivation. The new OPFOR tactics were based on a reorientation of intelligence, an Iraqi-style "trenchline" defense and a focus on the infantry fight. They also included a complex obstacle system and counter-mine equipment and training.<sup>23</sup>

### **The Joint Readiness Training Center**

The first rotation with a battalion task force of the 82d Airborne Division had taken place in October 1987 at the Army's new Joint Readiness Training Center at Fort Chaffee, Ark. The success of the NTC in training heavy mechanized forces had led the Army to consider a similar facility for the training of the Army's airborne, air assault, Ranger, Special Operations, and light infantry battalions in deployment and tactical operations under anticipated conditions of low- and mid-intensity conflict. The Air Forces' Military Airlift and Tactical Air Commands would also participate in the exercises. Like the NTC, the JRTC featured an operations group and an OPFOR trained and equipped to support twelve-day combined arms force-on-force field training exercises for the Army's major light units. Unlike the NTC, the JRTC was completely a TRADOC project initially. The OPFOR was capable of replicating a range of threat from terrorism through the vehicle array of a reinforced Soviet airborne battalion. The training for the deployment of units into a hostile environment employed strategic and tactical airlift of the U.S. Air Force. Lessons learned at the JRTC would be exploited in the interest of improving training for light forces in the future.<sup>24</sup>

In FY 1991, the JRTC completed 10 rotations. The light forces training center provided accelerated rotations for 3 separate battalions from the 82d Airborne and the 101st Air Assault divisions as part of post-Operation Desert Storm training, as directed by the Chief of Staff of the Army. In late March, a CTC General Officer Executive Committee approved the training of 2 battalions rather than 1 battalion during each rotation. By the end of the summer, an interim instrumentation system was in place to support two-battalion rotations. The first such rotation was scheduled for July 1992.<sup>25</sup>

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23. (2) NTC ST 91-1, Order of Battle and Organization for the Samaran Army, 7 Feb 91. Preface. (2) NTC ST 91-2, Doctrine and Tactics, 7 Feb 91.

24. TRADOC ACH, CY 90, p. 159. (FOR OFFICIAL USE ONLY -- Info used is not protected)

25 (1) SSHR, ODCST, CY 91/I, p. 72; CY 91/II, p. 90. (2) Briefing Slide, ODCST Quarterly Update, 3 May 91.

Fort Chaffee had always been considered only a provisional home for the JRTC. In 1991, the lengthy process to find a permanent home for the training center came to an end. Originally on the list as possible sites were Fort Chaffee, Fort Stewart, Fort McCoy, and Fort Lewis/Yakima Firing Center. During September and October 1990, the list was expanded to include Forts Polk, Hood, Riley, and McClellan. Fort Polk was determined to be the only suitable candidate. In April 1991, the Army Basing Study and the Base Realignment and Closure 91 Study, which included the JRTC requirement, was approved by the Chief of Staff of the Army and forwarded to the Secretary of Defense. The study recommended as the best option that of stationing the JRTC at Fort Polk, but only after the projected transfer of the 5th Infantry Division (Mechanized) from that installation. The Secretary of Defense decided to accept the recommendation and forwarded the report to the Base Realignment and Closure Commission and the General Accounting Office for action. The 199th Brigade (Motorized) from Fort Lewis, Wash. would be the dedicated OPFOR upon its restationing at Fort Polk in the summer of 1993. The unit would be redesignated the 2d Armored Cavalry Regiment (Light).<sup>26</sup>

The CAC commander was seriously concerned with the decision to reorganize the 199th as OPFOR. In a message to the FORSCOM commander, he expressed his misgivings that a highly capable unit should be transformed into "one that would require major surgery if ordered into combat. . . . Simply stated we cannot afford a unit whose sole mission is OPFOR. Moreover, it would fundamentally undo the many years of hard work that have gone into designing a motorized unit tailor-made to support light forces." He went on to say that the 199th as currently organized, met the need of a "power projection Army that is rapidly deployable, high[ly] mobile, and lethal with high antiarmor capability. . . . The 199th is critical to the Army's force structure, now and in the future." He suggested a light infantry brigade might be reassigned to the JRTC. At the end of the year no plans with regard to the 199th Infantry Brigade (Motorized) had been changed.<sup>27</sup>

During 1991, a number of issues surfaced with regard to airspace management and control at the Fort Chaffee-based JRTC and with regard to the move to Fort Polk. There were several restricted areas and military operations areas associated with Fort Polk and nearby England Air Force Base. The closure of England AFB and the new JRTC mission of Fort Polk caused the Army to review available airspace. The JRTC mission required approach control service and access of controlled airspace during the conduct of all rotations, which ranged in length from twelve to twenty days every month. JRTC air operations, involving all services, were conducted continuously day and night to support each rotation. Fort Polk required control of all airspace within a 50 mile radius of the airfield. When airspace was not required for training, it would be returned to the Federal Aviation Agency (FAA). The Air

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26. (1) CAC Update, 23 May 91. (2) SSHR, ODCST, CY 91/II, p. 90.

27. Msg. Cdr CAC to Cdr FORSCOM, 09014Z, subj: Reorganization of 199th Inf Bde (Mtz) as JRTC OPFOR, Doc V/11.

Force would justify its requirements through its own chain of command. Efforts continued to achieve FAA approval of airspace management.<sup>28</sup>

During 1991 and before, much concern was being expressed from a variety of sources over the lack of Army aviation participation at the JRTC. In the early fall, the CAC commander called a meeting to discuss the issue and establish a clear statement of the doctrinal requirements and related training objectives for aviation at both the JRTC and the NTC. It was expected that the meeting would lead to an articulation of the long-term CTC aviation objectives and allow a comparison between the cost and the training value to reach those objectives. Elements of Army and Air Force aviation concerned with the CTCs were continuing to work out a program that would benefit all the CTCs.<sup>29</sup>

Since the first units had rotated through the JRTC in 1987, force-on-force maneuvers had been performed using only an interim "poor man's" instrumentation system. In 1991, that system continued in use. Initial operation of a full-scale instrumentation system had been planned originally for FY 1994. However, after the CTC Master Plan was briefed to the Chief of Staff of the Army in March 1989, the operational date for the JRTC "objective" system was moved forward to FY 1997. At the end of 1991, an objective instrumentation system for the light forces training center had been partially funded and was on the "must fund" list for the remainder of the necessary resources. CTC developers also planned a MOUT (military operations on urban terrain) facility for the JRTC.<sup>30</sup>

#### **The Combat Maneuver Training Center**

In addition to the continuing development of the NTC and the plans to establish the JRTC permanently at Fort Polk, the Army continued the establishment of the Combat Maneuver Training Center (CMTC) at Hohenfels, Germany. Training offered there provided, for European based troops, the same realistic mid- to high-intensity combined arms training exercises as were offered at the NTC. Like the NTC, the training center in Germany featured an OPFOR, an Operations Group, observer-controllers, force-on-force maneuvers, an instrumentation system, after action reviews, and take home packages. The fourteen-day rotation for visiting units featured eight days of force on force maneuvers. In 1991, the CMTC conducted ten brigade level rotations. The Operations Group had started out under USAREUR control, with a memorandum of understanding in place to transfer control to TRADOC in FY 1992. In early 1991, the Chief of Staff of the Army approved a delay of that transfer. Initially, USAREUR rotated an interim OPFOR through the CMTC with plans to have a

28. Msg. Cdr JRTC to distr. 231620Z Aug 91, subj. Airspace Requirements to Support JRTC at Fort Polk, Doc V 12.

29. Msgs. Cdr CAC to distr. 011630Z Oct 91, 051945Z Sep 91, subj. Army Aviation at the Combat Training Centers, Docs V 13 and V 14.

30. (1) Briefing Slide, ODCST Quarterly Update, 3 May 91. (2) TRADOC ACH, CY 90 p 160. (FOR OFFICIAL USE ONLY -- Info used is not protected) (3) Msg. HQDA to distr. 251315Z Jul 91, subj. Results of 23 July 91 Combat Training Center General Officer Executive Committee (CTC GOEC) Meeting, Doc V 17.

permanent organization in place over time. In November 1990, Company C, 1st Battalion, 4th Infantry was permanently stationed at Hohenfels to serve as part of the opposing forces. The 1st Battalion, 4th Infantry was activated on 16 November 1990 and its new commander took charge in December. By the end of 1991, most of the dedicated OPFOR was in place. At the end of the year, visual modifications (VISMOD) were being applied to weapons systems. Meanwhile, an interim instrumentation system was being replaced by an objective one, which was scheduled for completion in FY 1992.<sup>31</sup>

During 1991, the United States' NATO partners expressed increasing interest in participating at the CMTC. The Bundeswehr conducted a CMTC-supported rotation and requested continued participation in the program. The Royal Netherlands Army planned a CMTC rotation, but had to cancel when technical problems with the MILES system arose. They planned to reschedule when the problem was resolved. A Spanish battalion conducted field training exercises at the Hohenfels training area, but without CMTC support. French forces had scheduled a rotation in June 1992.<sup>32</sup>

### **The Battle Command Training Program**

Since 1987, the Battle Command Training Program (BCTP) had trained active and reserve division and corps commanders and their staffs in the combined arms, joint operations, logistics, and command and control warfighting skills necessary to win the AirLand Battle. The program consisted of a five-day seminar conducted at Fort Leavenworth followed by a five-to-seven day computer-driven warfighting command post exercise conducted by mobile training teams at home station (except for CGSC students and Army National Guard units). The seminars provided the training audience an opportunity to determine their training requirements, develop training plans, discuss doctrine and tactics, and arrive at insights about modern warfighting. Warfighter exercises provided realistic, interactive, battlefield simulations that required the player unit to fight as a team while performing to standards. In that way, commanders and their staffs could practice their skills far more regularly than with large scale field exercises that were increasingly limited by constraints in resources, including training land. The BCTP also served as a data source for programs to improve Army doctrine, training, organizations, materiel, and leadership. In short, the BCTP was the technologically advanced successor to yesterday's sand table and map exercise.<sup>33</sup>

Beginning in August 1990, BCTP operations were greatly modified by Operations Desert Shield and Desert Storm. BCTP personnel were deployed to Saudi

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31 (1) TRADOC ACH, CY 90, pp. 162-63. For a detailed discussion of the development problems with the CMTC instrumentation system, see TRADOC ACH, CY 90, p. 163. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) SSHR, ODCST, CY/I, pp. 72-73; CY/II, pp. 90. (3) Briefing Slide, ODCST Quarterly Update, 3 May 91, Doc V/15.

32 SSHR, ODCST, CY 91/II, p. 90.

33 TRADOC ACH, CY 90, p. 163-64. (FOR OFFICIAL USE ONLY -- Info used is not protected)



Arabia to assist units in wargaming "courses of action" and running battle staffs through mini-warfighting exercises. Courses of action were wargamed in support of ARCENT, XVIII Airborne Corps, III Corps, and VII Corps. In December 1990, BCTP supported an XVIII Airborne Corps command post and communications exercise and an ARCENT map exercise. In January 1991, the program supported command post and wargaming exercises for the VII Corps. When the training was done, many of the BCTP staff members were pressed into last minute key staff vacancies during the 100-hour war, with ARCENT, VII Corps, XVIII Airborne Corps, and the 3rd Armored Division. Predeployment seminars were also provided for the III Corps, the 1st Cavalry Division, the 1st Armored Division, and the 2d Armored Cavalry Regiment. After the Persian Gulf operations were over, the BCTP conducted the first allied seminar with the British 3rd Armored Division at Fort Leavenworth.<sup>34</sup>

### **Training Management and Development**

In order that TRADOC's total mission be fulfilled, it was essential that training strategies and programs be conceived, developed, and executed to properly support doctrine, force design, and materiel development, acquisition, and fielding. Training had to support not only the current Army but that envisioned for the future. Training systems had to support units as they transitioned to new organizational structures and received modernized weapons. Training development and management needs were identified through the Concept Based Requirements System (CBRS), a long range planning process whereby planners provided the conceptual framework for the future battlefield that was then used to determine requirements for doctrine, training, force design, and materiel. Training needs were defined through the Systems Approach to Training (SAT) which was the process by which the Army made training decisions. During 1991 and for the foreseeable future, the major initiative in the training arena was the Combined Arms Training Strategy (CATS), an "overarching" concept that sought to bring together the best possible mixture of training aids, devices, simulators, simulations, and field training exercises, given the resources available. In short, CATS looked to the best strategy to train to standard with available or anticipated resources, both for the present and for the future.

### **The Combined Arms Training Strategy**

In August 1988, the TRADOC Deputy Chief of Staff for training in cooperation with the Department of the Army, FORSCOM, the National Guard Bureau, CATA, the TRADOC schools, Seventh Army Training Command, the Program Manager for Training Devices (PM TRADE) and other commands and agencies had begun building a comprehensive force training strategy. The new initiative had its roots in several Department of the Army special task forces such as the Armored Family of Vehicles task force and the Armor-Antiarmor Special Task Force, and related TRADOC initiatives which were combined into one. As General Vuono, the Chief of Staff of the Army, envisioned it, the Combined Arms Training Strategy, known as CATS, would be a transition plan to modernize the total force's training system through time by linking near-term with long-term strategies for active armored, light, special operations, support,

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34. (1) SSHR, ODCST, CY 91/I, 72; CY 91/II, 90. (2) CAC Update, 23 May 91. (3) Msg. COMARCENT to Cdr CAC, 151200Z Apr 91, subj: Battle Command Training Program (BCTP) Support for Operation Desert Shield/Desert Storm. Doc V/16.

and reserve component elements of the force across the seven battlefield operating systems. The strategy, as it evolved, would specify a concept of training in terms of institution, unit, and self-development for each proponent and establish resource requirements to support the strategy over time, out through the years of the budget planning process.<sup>35</sup>

Until recently, support for Army programs, training or otherwise, had been relatively substantial. Generally funds had been available for training the Army in TRADOC schools and in units. The Gramm-Rudman-Hollings legislation notwithstanding, the budget constraints during the 1980s were not as evident as in previous post-and interwar periods. The establishment of the CTCs and the development of increasingly more sophisticated training simulators and simulated programs bore witness to that fact. Because money had been relatively plentiful, careful long-range training development and management planning to identify the best use of training resources had not been undertaken in a systematic way. Although the Army turned increasingly to training devices as a solution to meeting training requirements, the "more is better" philosophy continued to prevail. That is, more field exercises, more gunnery, more flying hours. Those solutions also meant more "operating tempo" (OPTEMPO)--gas, spare parts, ammunition. The lack of a comprehensive system came into sharper focus in the late 1980s and early 1990s as severe budget cuts combined with the greater range and lethality of new weapons systems to leave many training requirements unmet. In some cases there was needless duplication in training devices and systems, while other needs went unsupported.<sup>36</sup>

It was against this background that the CATS concept of an Armywide training plan was born. General Vuono believed that CATS could provide the "how, what, and with what" of training. CATS would become the Total Army Plan that FM 25-101, Training the Force, doctrine would manage. CATS would thus be the Army's vehicle for rationalizing funding priorities for training resources. The new strategy would take into consideration unit training, institutional training, and self-development. In each mission area, the Army would identify the tasks that each soldier, active and reserve, had to have and determine what training resources were necessary to train those tasks. All resource requirements--petroleum products, spare parts, ammunition, ranges, training land, military construction, training aids, devices, simulators and simulation, and people--would be taken into account and added into the equation. The objective would be the best mixture of those resources, given the funding available, to execute the strategy. In short, the strategy would lay out the best combination of training devices and training resources to be acquired, through time, that assured an affordable, combat ready force. The TRADOC training community was acutely

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35. TRADOC ACH, CY 90, p. 166. (FOR OFFICIAL USE ONLY -- Info used is not protected) "Proponent," for purposes of this discussion, should be considered to be any army agent that operated a school that trained soldiers for units of the field army and was responsible for designing units (doctrine, organizations, materiel). With this definition, proponents for battalion and below were the branch schools. For brigade and above, proponents were CAC and CASCOR. For Special Operations Forces, the proponent was the Special Warfare Center.

36. Lt Col Thomas R. Rozman, "Making the Combined Arms Training Strategy Work," Military Review, May 1991, pp. 75-76.

aware that in some cases a less than perfect solution to a training need might have to suffice because a 100 percent solution was unaffordable.<sup>37</sup>

By the end of 1989, the CATS effort had generated an initial breakdown of the resources that would be required by year and by type of funding to provide the necessary training resources. The coordinating draft of TRADOC Pamphlet 350-4 entitled "Army Training 2007," staffed within the Office of the Deputy Chief of Staff for Training, the integrating centers, and the schools, reflected the training developers' assessment of what would be the best mixture of training and training resources by year to the year 2007. This document captured the CATS Concept as it was understood at the time. Plans were that CATS would gradually be folded into a larger "capstone" concept and strategy to serve as the training equivalent to the Airland Operations warfighting concept.<sup>38</sup>

Because TRADOC had interpreted the strategy as primarily a training device plan, the Combined Arms Training strategy had been briefed to General Vuono on 4 December 1989 as the "device based training strategy." At that time he directed that that name change be rescinded. He also directed that the CATS effort be expanded with an FY 1994 "versatile force" balance including strategies for heavy, light, heavy/light, special operations forces, the reserve components, installations and units. Vuono also requested that developers take a look at the TRADOC institutions to insure that service school graduates encountered nothing to do with training when they reached their units that they had not been exposed to in the schools. Vuono told TRADOC to update him on the progress of the CATS effort in 6 months.

The final draft of Army 2007 was published on 13 April 1990. In late June 1990, via teleconference, TRADOC headquarters explained the CATS to the centers and schools and defined what their role would be. Each school would be responsible for developing its own part of the overall training strategy and identifying the resources to support it. Training developers expected that when the CATS was fully implemented, all the pieces would be integrated into a total force training strategy that would provide Department of the Army direction and focus in training and training management while retaining responsiveness to changes in the force training environment. TRADOC informed the centers and schools that there were two essential pieces of the strategy that had to be pulled together quickly. First, each proponent had to complete its training strategy. Second, priority had to be assigned to the training aids, devices, simulators, and simulations (TADSS) that would support the various strategies. In short, the Army had to know which training resources would support what training events and to what standard, in order to determine the rationale for acquisition of those resources. The plan was that CATA would review the various strategies and resolve any conflicts that developed. Then, in conjunction with the Army Training Support Center, CATA would develop a single list of TADSS, ranking each in order of importance. In assessing the TADSS, training developers considered those devices expected to be available in FY 1994. The lists from the

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37. TRADOC ACH, CY 90, p. 166. (FOR OFFICIAL USE ONLY -- Info used is not protected)

38. (1) TRADOC ACH, CY 90, pp. 166-67. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) TRADOC Pam 350-4 (Draft), Army Training 2007, 25 Aug 89.

schools were due to CATA by 13 July 1990, along with lists of TADSS each would like to see fielded in the FY 1995 to FY 1999 period. CATA provided the integrated list to TRADOC which, in turn, sent the strategies and the integrated list to the MACOM commanders. The same information was provided to the Chief of Staff of the Army in September 1990. Meanwhile, at a meeting of senior Army officials in August 1990, General Vuono pronounced the CATS focus "exactly right" and directed it be implemented. On 4 September 1990, Maj. Gen. Craig A. Hagan, TRADOC Deputy Chief of Staff for Training, assigned CATA (soon to be known as the Combined Arms Command-Training, or CAC-T) as the executive agent for CATS and thus for implementation of the training strategy.<sup>39</sup>

During 1991, TRADOC training developers continued to refine the Combined Arms Training Strategy and to bring other training initiatives such as the CTC Master Plan, the Family of Simulations (FAMSIM) Master Plan, and the Close Combat Tactical Trainer, under the CATS "umbrella." Embedded training and distributed training development were also a part of the CATS. All those ongoing initiatives would become the "enablers" of the overall training strategy. On 15 January 1991, General Vuono received an in-process review on CATS, at which time he stated his satisfaction with the progress of the project. Preliminary drafts of the division and brigade unit strategies were mailed to the field for review on 28 March 1991. A month later the corps level unit strategies were mailed. In another in-process review on 13 June 1991, General Vuono provided training developers with guidance on an expanded marketing strategy for CATS to expedite the program's acceptance in the field. In October and November 1991, a "strawman" TRADOC regulation articulating how TRADOC would apply CATS to training development was staffed with CAC, CASCOT, ATSC, and TRADOC headquarters. Comments were incorporated into a coordinating draft as TRADOC Regulation 350-XX to be staffed in early 1992. Meanwhile, CATS had been incorporated into the Army Plan, the draft Army Long Range Training Plan, and revisions of Army Regulation 350-41 and 350-1.<sup>40</sup>

In August 1991, TRADOC headquarters initiated a study to determine where in TRADOC, CATS policy development and future strategy development should take place. Up to that time the Joint and Combined Unit Training Directorate, later Collective Training Directorate, had held responsibility for shaping the strategy. It was determined that the best place for exercise of that function would be in the Training Development and Analysis Directorate (TDAD), also of the office of the Deputy Chief of Staff for Training. After the concurrence of the CAC commander, that move was made on 13 December 1991. Responsibility for current CATS development and issues would remain at CAC-T, with a monitoring function remaining with the Collective Training Directorate of the Headquarters TRADOC Deputy Chief of Staff for Training. CAC-T retained responsibility for implementation.<sup>41</sup>

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39. TRADOC ACH, CY 90, pp. 167-68. (FOR OFFICIAL USE ONLY -- Info used is not protected)

40. SSHR, ODCST, CY 91/I, p. 75; CY 91/II, p. 92.

41. Ibid.

Related to the CATS effort was a joint TRADOC-FORSCOM reserve component project of 1991. That effort began on 29 April 1991, with a memorandum signed by the Department of the Army Deputy Chief of Staff for Operations and Plans, Lt. Gen. Dennis J. Reimer, creating a Roundout Brigade Task Force which he would chair. The task force's mission was to examine the wider issues of reserve component mobilization that had surfaced during Desert Shield. TRADOC training planners represented the command in the discussion of training base and training development issues. Key participants, in addition to Department of the Army and TRADOC, were the National Guard Bureau, the Office of the Chief, Army Reserve, and FORSCOM. Forces Command was ultimately directed to be responsible for the training issues, with TRADOC providing training development support. FORSCOM named the training part of the effort "Bold Shift."

During the period 4-18 October 1991, representatives of the Infantry, Armor, Field Artillery, Engineer, Ordnance, Quartermaster, and Army Medical Schools participated with FORSCOM teams to design model training programs. The specific task of the TRADOC representatives was to look at the FORSCOM effort for issues that the schools needed to include in the reserve component (RC) portion of their proponent training strategies. Later, TRADOC directed all proponents to incorporate the findings of FORSCOM's Bold Shift into revisions of current and future CATS. Primarily that would involve premobilization tasks, skills, and levels to be trained in light of Operation Desert Shield and Desert Storm experience and the identification of the necessary mixtures of training resources. As a result of those efforts, TRADOC proponent schools designed specific courses and unit training strategy modifications to assist the RC to train critical premobilization tasks and skills. Additionally, courses were developed to improve individual and leader skills through attendance at specially tailored courses or exercises. At the end of the year, the pilot courses developed by the Infantry, Armor, Engineer, and Quartermaster Schools were ready for implementation. CAC developed an RC Tactical Commanders Development Course that would train RC roundout brigade and battalion staffs beginning in February 1992.<sup>42</sup>

### **Training Doctrine, Publications, and Studies**

Late in 1990, the Army introduced the long awaited FM 25-101, Battle Focused Training, its newest major training doctrine manual, which was intended to guide the training of battalion and company level soldiers, leaders, and units. The new manual both complemented and supplemented the capstone training management manual, FM 25-100, Training the Force, which had been fielded late in 1988. FM 25-100 established the Army's training doctrine, and FM 25-101 was designed to apply that doctrine and assist leaders in the development, execution, and evaluation of training programs. FM 25-101 reflected the ideology and philosophy behind CATS and other Army initiatives that supported CATS, namely that the Army could not afford to train in the future as it had in the past.

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42 (1) SSHR, ODCST, CY 91/II, pp. 92-93. (2) Msg, Cdr TRADOC to Cdr CAC, 021030Z Dec 91, subj: Revision of Combined Arms Training Strategies [CATS] in Conjunction with Reserve Component [RC] Training Enhancement Action Plan, Doc V/17. (3) Lt Col Thomas R. Rozman, "Rethinking Readying the Reserves for War," Army, March 1992, pp. 12-18. The Roundout Brigade Task Force changed the name of its effort to the Reserve Component Enhancement Action Plan.

To automate the CATS training development and management functions contained in FM 25-100, TRADOC had for some time been developing software programs to assist commanders and their staffs in using the field manual. The program was called the Standard Army Training System (SATS). When fully operational, SATS would automate the requirements, planning, resourcing, and scheduling functions of training managers. Initial fielding had begun in the late summer of 1989. Plans were that the SATS effort would evolve through affordable upgrades, databases, and integration with other existing and planned systems to an objective training management system. Plans had been to transfer proponentcy for the program from the Department of the Army to TRADOC on 1 October 1989. However, when all funds for SATS were lost, TRADOC took the position that unless the Department of the Army could fund the program, it would not be transferred to TRADOC. Headquarters Department of the Army requested that TRADOC extend the existing contract, which had expired. The command agreed to that action only until 1 April 1991. At that time, Headquarters Department of the Army transferred proponentcy for SATS to the Installation Support Module (ISM) program, which did have funds available to help SATS. TRADOC would remain the subject area functional proponent.<sup>43</sup>

Several TRADOC regulations and circulars dealing with the command's training functions were in various stages of development or revision in 1991. Training Circulars (TC) 25-1, Training Land, and 25-8, Training Ranges, were both published during the year. The primary purpose of TC 25-1 was to provide a method for calculating training land requirements by using a validated set of criteria. The circular dealt with the very sensitive issue of land acquisition and access, especially with regard to publicly-owned land. Attempts to gain the land necessary for training with weapons and equipment which featured increasing accuracy and range often met with close scrutiny from environmentalists, politicians, and the media. After publication, proponentcy for TC 25-1 moved to CAC-T. Training Circular 25-8, Training Ranges, was closely associated with TC 25-1. TC 25-8's primary purpose was to provide guidance for developing and operating Army and Marine Corps ranges. The circular acquainted installation and MACOM commanders with a "family" of training ranges designed to develop and improve soldier and team proficiency and competence in the use of sophisticated weapons. It was also designed as a guide to help trainers, range and mobilization planners, and engineers to establish effective range plans for the active and reserve components.<sup>44</sup>

Two new TRADOC regulations covering the development of extension training materials were prepared and published by the Army Training Support Center in 1991. TRADOC Regulation 351-16, Interactive Courseware Management and Development, provided guidance to the TRADOC schools for the development of interactive videodisc and computer-assisted extension training products. TRADOC Regulation 350-33, Extension Training Material Management and Development, provided guidelines for the

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43. (1) SSHR, ODCST, CY 91/I, p. 76. (2) TRADOC ACH, CY 91, p. 170-71. (FOR OFFICIAL USE ONLY -- Info used is not protected)

44. SSHR, ODCST, CY 91/I, p. 99; CY 91/II, p. 102.

development of all other extension training products.<sup>45</sup> A joint FORSCOM and TRADOC regulation that was undergoing revision was FORSCOM-TRADOC Regulation 140-3. The regulation provided specific policy, responsibilities, and guidance for planning, conducting, supervising, and evaluating the training of U.S. Army Reserve training divisions, separate brigades, separate battalions, and reception battalions. The regulation was on hold in 1991 pending final alignment of the Mobilization Army Training Centers (MATC) at TRADOC installations and the "Shadow TRADOC" study, an examination of a larger reserve role in training. In another action, the revision of TRADOC Regulation 351-1, Training Requirements Analysis System, had been postponed in 1990 pending implementation of the Mobilization Decision Support System (MDSS) which would automate development and submission of POIs and assist in course administration. Postponement made further sense in light of the implications of these policies vis a vis CATS. More work was required to determine relationships. Publication of the revised regulation was to be timed to coincide with fielding of the MDSS. In early 1991, the revision of 351-1 remained on hold because of Operation Desert Shield and Desert Storm priorities. At the end of the year, revision efforts had been resumed and were complete, with publication scheduled for the second quarter of FY 1992.<sup>46</sup>

Responsibility for the AR 5-5 training studies at TRADOC lay with the Office of the Deputy Chief of Staff for Training. During 1991, the deployment of troops in Operations Desert Shield and Operation Desert Storm delayed the data collection and the completion of several studies. However, the following were completed: Chaparral/Forward Looking Infrared Post Fielding Training Effectiveness Analysis, Light Helicopter Cost and Training Effectiveness Analysis, NBC Defense Training Effectiveness Analysis, Combat Maneuver Training Center Training Modeling Integration, and M2/M3 UCOFT Training Effectiveness Analysis. For 1992, those responsible for the AR 5-5 training studies looked forward to studies of simulated training, the M1A2 Abrams tank, the use of vocational technical centers for training, distributed training, the RAH-66 Comanche helicopter, and air defense artillery reserve component training. In FY 1992, the AR 5-5 program would include seventy-eight training studies.<sup>47</sup>

During the year, the Deputy Chief of Staff for Analysis continued as the single monitor for RAND Arroyo Center research that was sponsored by TRADOC. Training and analysis planners met on several occasions to discuss ongoing projects. The most significant RAND projects in progress in 1991 were the Future Individual Training Strategy and the Unit Training Strategy Studies. The former was a study of the Army's military occupational specialties (MOS) program. The latter was an exploratory program to study unit training resource mixtures that would emphasize the tradeoffs between training devices and field training.<sup>48</sup>

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45. PROFS Note to OCH from Mrs. Diane Jennings, ATSC, 16 Jun 92.

46. (1) SSHR, ODCST, CY 91/I, pp. 6, 52; CY 91/II, p. 63. (2) TRADOC ACH, CY 90, p. 172. (FOR OFFICIAL USE ONLY -- Info used is not protected). (3) For a discussion of the "Shadow TRADOC" concept, see below, p. 191.

47. SSHR, ODCST, CY 91/I, p. 90; CY 91/II, p. 167.

48. SSHR, ODCST, CY 91/I, pp. 91-92; CY 91/II, p. 168.

The Army Institute for Professional Development (AIPD) of the U.S. Army Training Support Center managed the consolidated Army Correspondence Course Program (ACCP) for twenty-two TRADOC schools and four Department of Defense schools. As of 31 December 1991 total enrollment in the ACCP was 383,083. Of the total enrollment, 63 percent were Active Army, 14 percent were Army National Guard, and 14 percent were U.S. Army Reserve. The remaining 9 percent represented the civilian sector and other military services. As a result of severe budget decrements, the Institute continued to make alternative plans to minimize the impact of those budget cuts on nonresident training programs. The irony of that situation was that the ACCP was a critical element in the distributed training strategy designed to lower training costs while maintaining quality instruction. The concept of distributed training was based in large measure on bringing the training to the student as opposed to absorbing the costs of temporary duty for school attendance. In a related action, on 17 April 1991, thirteen students were enrolled in the mandatory nonresident correspondence course phase of the Avionics Maintenance Supervisory Course of ANCOC. That was the first course to be offered under the new Distributive Training Program. By year's end, three additional courses had been added, and the TRADOC schools continued to develop courses.<sup>49</sup>

Assigned to integrate correspondence courses and resident training, the AIPD had established a three phase strategy. Phase I, concept development, was completed by mid-1989. Phase II, the implementation and evaluation of pilot courses in each TRADOC school, continued during 1991. Twenty-four courses were scheduled to begin in FY 1991 and FY 1992. The pilot selections represented a cross-section of combat arms, combat support, and combat service support courses. Evaluation was the responsibility of the DCS for Analysis and would be conducted as a TRADOC AR 5-5 study program. Phase II of the course integration project would be fielded Armywide, pending successful development efforts. The primary testbed would be at the Sergeants Major Academy. In coordination with the Individual Training Directorate of the Office of the Deputy Chief of Staff for Training and the Sergeants Major Academy, the Armor School began development of the common core pre-resident phase for all basic and advanced NCO courses. In an attempt to solve the problem of identifying students scheduled for resident training, TRADOC began to link the Army Training Requirements and Resource System and the TRADOC Educational Data System. At the end of the year, problems still existed with the completeness and accuracy of student addresses.<sup>50</sup>

Faced with postal increases of some 19 percent in FY 1991 and mail budget reductions, the AIPD undertook a study of mail automation procedures to identify methods of reducing mailing costs for distribution of Army correspondence courses and related materials. Hardware and software were purchased which would permit the conversion of all student addresses to a "Zip Code plus four numbers" format, verification of addresses, and sorting. When fully in place, it was expected the system would minimize costs and expedite the flow of mail through United States

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49. SSHR, ODCST, CY 91/I, pp. 121, 124; 91/II, pp. 135, 138.

50. (1) SSHR, ODCST, CY 91/I, 121. (2) TRADOC ACH, CY 90, p. 174. (FOR OFFICIAL USE ONLY -- Info used is not protected)



Postal Service Centers. At the end of the year, data base conversion of new APO and FPO numbers had been completed. Also during the year, Operation Desert Storm and Operation Farewell mail distribution schemes for Army units were received from the theater. That listing would facilitate the change of student data base addresses and prevent mail from being reshipped from APO New York for those whose APO numbers had been discontinued.<sup>51</sup>

### Training Management Systems

The computer-based Automated Instructional Management System (AIMS) was designed to assist trainers at the schools and Army training centers in the management of individual and group paced training and to handle administrative and scheduling functions. By 1987, the system was operational at twenty-three sites. By 1990, those sites had been connected to the TRADOC Decision Support System (DSS). By mid-1991, software had been installed at all sites to connect the AIMS with the Army Training Requirements and Resource System (ATRRS). It was then possible to schedule an entire year of training with regard to numbers and starting dates of classes. Early in 1989, functional proponentcy for AIMS had been transferred from the ATSC to the TRADOC Office of the Deputy Chief of Staff for Training, Training Operations and Management Directorate (TOMA) at Fort Monroe. The automated training management system was then renamed TAIMS, the "T" standing for TRADOC. Since that time a new "functional description" of AIMS capability had allowed data collected on resident students to be linked to other automated systems, in usable format. In 1990, the AIMS project manager worked with the Department of the Army project manager for the installation support module (ISM) to establish AIMS as a Department of the Army instructional management system. During 1991, that project reached fruition and the name of the system once again became AIMS, although TRADOC remained the functional proponent. It was expected that the new system would result in reduced operating and maintenance costs. Contractor support for AIMS was assured only through 30 September 1992, with no option for renewal. As a result, system managers turned their focus to redesigning the Automated Information Management System.<sup>52</sup>

TRADOC developed training programs following a systematic process called the Systems Approach to Training (SAT) as set forth in TRADOC Regulation 350-7. The SAT was the application of the processes of evaluation, analysis, design, development, and implementation to determine the who, what, where, when, why, and how of training. The SAT applied to all training programs, products, and materials for which TRADOC had a training responsibility. Because SAT was a time-consuming manual process, too cumbersome to support the development process needs of CATS, efforts had been underway for some time to automate the system. When the Automated Systems Approach to Training (ASAT) project was completed, it would be possible to automate training development products for both individual and collective training. In October 1990, representatives of the LINK Training Service Corp. visited all TRADOC

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51 (1) SSHR, ODCST, CY 91/I, p. 135; CY 91/II, p. 120. (2) TRADOC ACH, CY 90, p. 174. (FOR OFFICIAL USE ONLY -- Info used is not protected)

52. (1) SSHR, ODCST, CY 91/I, p. 50; CY 91/II, p. 62. (2) TRADOC ACH, CY 90, p. 175. (FOR OFFICIAL USE ONLY -- Info used is not protected)

training sites and determined that an automated SAT was the most efficient method by which to develop training for the Army. On 27 September 1991, the Assistant Deputy Chief of Staff for Training (Plans and Support) approved the functional description for ASAT. Ultimately, the ASAT would be a part of the TRADOC Decision Support System. As 1991 ended, an ASAT "hardware and networking" project was underway to provide workstations, network equipment, and services to support the ASAT. When completed, the project would result in the implementation of three training development networks, at the Transportation, Armor, and Aviation Logistics Schools. Network equipment would be provided to augment the existing networks at the Signal and Field Artillery Schools. Additional personal computer workstations and other necessary equipment would be distributed to the remaining proponent schools. Meanwhile, representatives of the U.S. Army, the U.S. Navy, the U.S. Air Force, and industry had formed a working group looking to the development of a Joint Systems Approach to Training (JSAT).<sup>53</sup>

The first phase of the development of the TRADOC Decision Support System (DSS) had begun in 1987. During 1988, central processing units were upgraded at all sites. In 1989, TRADOC training developers and managers provided support to the ASAT contractor for development of a database known as the Training Development Workload Management System (TDWMS) which was one of three core databases in the TRADOC DSS training module (TRAMOD). During 1991, the new database was incorporated into the ASAT as the planning module, to provide Headquarters TRADOC, the Army Training Support Center, the major subordinate commands, and the Army service schools with an improved training development management tool. As such, it would replace the Army Extension Training Information System database, which was twelve years old and difficult to use. The TDWMS would serve as a major source of information with regard to TRADOC long-range planning and programming. In a related action, in May 1990, an effort had begun to develop a TRAMOD master plan and management plan. The master plan was approved on 11 January 1991. The TRADOC Assistant Deputy Chief of Staff for Training (Plans and Support) approved the TRAMOD management plan on 16 December 1991. The two plans provided the basis for all subsequent TRAMOD system development.<sup>54</sup>

TRADOC planners eagerly awaited the completion of the new TRAMOD training information system, which would support Army training from the individual level through the institution to the unit. In that regard, current systems left much to be desired. Data sharing among users was difficult, redundant data existed within and between systems, sources were frequently not identified, and the same data often took on several forms with different meanings. In fact, a House of Representatives Appropriations Committee report claimed that "Army automatic data processing (ADP) . . . suffers significant deficiencies in organization, planning standards, competition, inventory accuracy, ability to track financial ADP resources, coordination between activities, cost effectiveness and excessive duplication." It was hoped that the DSS

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53. SSHR, ODCST, CY 91/ I, p. 84; CY 91/II, pp. 107, 163. For a detailed description on the functioning of ASAT, see TRADOC ACH, CY 90, pp. 175-76. (FOR OFFICIAL USE ONLY -- Info used is not protected)

54. (1) SSHR, ODCST, CY 91/I, p. 84; CY 91/II, pp. 107-08, 164. (2) TRADOC ACH CY 90, p. 176. (FOR OFFICIAL USE ONLY -- Info used is not protected)

training module would become the conduit to all of the present and emerging training information systems in the Army. Achievement of such an objective was particularly important to managing effective CATS development.<sup>55</sup>

The Structure Manning Decision Review (SMDR) was an annual training requirements process chaired by the Headquarters Department of the Army Deputy Chiefs of Staff for Personnel and for Operations and Plans, with the participation of most of the Army's MACOMs, PERSCOM, OCAR, NGB, TRADOC, FORSCOM, and the service schools. The SMDR process identified resource requirements for training by MOS. The ultimate product of the review was the Army Program for Individual Training (ARPRINT), the training mission document for the TRADOC service schools and training centers. TRADOC's portion of the FY 1994 SMDR was conducted from 31 March-17 April 1991. At that time, FY 1993 requirements were reviewed and adjusted, and FY 1994 requirements were established. An approximately 8 percent overall reduction for TRADOC was realized by the FY 1993 requirement review. The FY 1994 program was 7 percent lower than the adjusted FY 1993 program. Also established at the meeting was an initial program for FY 1995 which was 1.1 percent below the projected FY 1994 program. The FY 1994 ARPRINT was published on 5 June 1991 as the new training mission requirements for TRADOC.<sup>56</sup>

Prior to the beginning of Operations Desert Shield and Desert Storm, Headquarters Department of the Army Deputy Chief of Staff for Personnel had planned to develop an FY 1992 ARPRINT for mobilization (MOB ARPRINT). Because of the events taking place in the Persian Gulf region, the action was not initiated, as personnel and resources were diverted to support Army forces deploying to the theater. In addition, following the dissolution of the Warsaw Pact, widespread political, economic, and military changes were taking place throughout Europe and the Soviet Union. Also, major changes were made in the Joint Chiefs of Staff (JCS) mobilization planning guidance. Previous MOB ARPRINTs had addressed only one conflict scenario, global war, and only one level of mobilization, full mobilization. The new JCS guidance directed that any future development of a MOB ARPRINT address two conflict scenarios--a major regional conflict and a general war. Each was to include multiple levels of mobilization: A presidential Selected Reserve call-up and partial mobilization, which might be followed by full mobilization or total mobilization. The changes were of such a magnitude that complete redesign of the ATRRS Mobilization Planning System would be required to develop the MOB ARPRINT for each prescribed scenario. In April 1991, the Headquarters Department of the Army Deputy Chief of Staff for Operations and Plans initiated an "Integrated Army Mobilization Study," a review and analysis of two major regional conflicts and one general war conflict as prescribed by the JCS. The specifications for the study provided for three fully developed MOB ARPRINTs to define the training base expansion requirement, its capability, and a cost and benefit analysis to overcome training resource shortages for each

55 Maj Donald D. Pryer, "Training Information Management: A Vision for the Future," *Army Trainer*, Winter 1989, p. 36.

56 SSHR, ODCST, CY 91.1, pp. 51-52.

of the scenarios by mid-August. The information requirement for the general war scenario was subsequently moved back to mid-September 1991.<sup>57</sup>

### **Training Aids, Devices, Simulators, and Simulations**

Training aids, devices, simulators, and simulation (TADSS) had long been a part of the Army's training methodology and along with OPTEMPO, ranges, training load, communication, and CTCs, represented a major training resource area of CATS. As training developers looked to a future of severely rationed resources, weapons with increasing range and lethality, and environmental concerns over land use, it became clear that Army training would depend more than ever before on TADSS and that training would become more device based as opposed to device supported. Planners were quick to point out, however, that the widespread use of TADSS would not eliminate the need for field training. TRADOC training developers had precise definitions for the terms that made up the acronym "TADSS." Training aids were defined as items that assisted in conducting training and aided in the learning process, such as visual modifications, graphic aids, and slides. Training devices were three dimensional objects that improved training by giving the soldier something that substituted for actual equipment, such as the MILES, simulation of area weapons effects-radio frequency (SAWE-RF), and practice mines. Training simulations gave leaders effective alternatives when maneuver and gunnery training opportunities were limited. They helped create the environment and stress of battle needed for effective training. Several examples of simulations were the Brigade-Battalion Simulation (BBS), JANUS, and the Corps Battle Simulation (CBS). Training simulators were defined as a special category of training devices that replicated all or most of a system's functions, such as the conduct-of-fire trainer and flight simulators. Major development efforts in 1991 and into the future included the family of simulations (FAMSIM) and the Combined Arms Tactical Trainers (CATT). The latter was based on simulation networking (SIMNET) technology. Future commanders would also benefit from "distributed training" which depended heavily on TADSS and "embedded training" that would allow training devices to be built into weapons systems in the developmental stage. Those training aids, devices, simulators, and simulations are discussed in greater detail below. The Combined Arms Training Strategy (CATS), discussed earlier, would be the architecture to bring all the TADSS, the Combat Training Centers (CTC), operating tempo (OPTEMPO), ammunition and other resources under a central decision-making system. In short, CATS would be the glue that bound technology-supported training resources with unit training needs. The Army's proponent for training simulations was its new Training Simulation Center (NSC) at Fort Leavenworth, Kan. The NSC provided centralized management of Army training simulation for TRADOC and simulation support for the entire Army.<sup>58</sup>

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57 SSHR, ODCST, CY/I, p. 54

58 (1) Briefing Slides, "Device Based Training Strategy," ODCST, 22 Sep 91.

(2) Briefing Slides, training presentations, TRADOC Liaison Officer's Conference, 26-30 Aug 91, Hampton, Va.

## Training Simulators and Simulations

**SIMNET and the Combined Arms Tactical Trainers.** SIMNET was a grouping of simulators whose databases could be networked to maneuver together as a combined arms force on a simulated battlefield. The system allowed many ground force units to participate in simulated battles at the same time without deployment from home station. The eight-year-old SIMNET project was a joint effort of the U.S. Army and the Defense Advanced Research Projects Agency (DARPA). The 236 simulators that made up the system were deployed in eleven battalion-company sites worldwide. The SIMNET technology allowed, for example, a tank driver at Fort Knox to look through the range-finder of his simulator and see an animated version of a Central European battlefield. At the same time, an infantry scout at Fort Benning might be looking at the same battlefield and watching the Fort Knox tanker's actions. In 1990, the Army and the U.S. Navy held a joint simulated exercise that allowed the Navy to pick up Army "aircraft" on their radar screens and shells from the simulated naval gunfire to land in the Army's SIMNET world. After a battle, participants could "walk" back through it and review how their actions had affected the outcome. As defense budgets became more constricted, technology like SIMNET offered a viable alternative to actual training on the Army's expensive weapons systems.<sup>59</sup>

A project begun in 1991, and which would stretch at least ten years into the future, sought to apply the technology used to develop SIMNET trainers to a family of Combined Arms Tactical Trainers, or CATT. The CATT family of trainers would allow commanders to train in a virtual combat environment from team-squad to company level. Trainers would be developed by the Armor, Infantry, Aviation, Air Defense, Field Artillery, and Engineer Schools. The first project in the series, the development of a close combat tactical trainer (CCTT), was underway in 1991. The CCTT, being developed by the Armor and Infantry Schools, would be a series of M1 Abrams tank and M2/3 Infantry Fighting Vehicle simulators networked with combat support emulators. The training device requirement (TDR) was staffed early in 1991. Original plans were to field an objective system by 1999-2000. However, during the staffing of the TDR, USAREUR requested a "Quickstart" plan to field Combined Arms Tactical Trainer prototypes early at existing SIMNET sites to meet immediate training requirements. That plan, which would move fielding of the first CCTT to 1995, was approved. The early tactical trainer systems would serve to provide realistic training while acting as an operational test of the CCTT concept before large-scale production began. The Army System Acquisition Review Council approved the full scale development of the CCTT on 12 June 1991. Meanwhile, the training developments industry eagerly awaited the release of the request for proposal (RFP) to conduct the estimated \$1 billion project.<sup>60</sup>

As with many such ambitious and costly projects, the CCTT program ran into initial difficulties. The project manager for training devices (PM TRADE) expected to

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59. (1) Fact Sheet ATSH-TDS-I, 24 Apr 91, Simulation Networking (SIMNET). (2) James Kitfield, "War on Planet Simnet," Government Executive, Apr 90, p. 25.

60. (1) CAC Update, 23 May 91. (2) SSHR, ODCST, CY 91/2, p. 145. (3) Msg. Cdr AMC to distr, 171500Z Apr 91, subj: Close Combat Tactical Trainer (CCTT), Doc V/18.

issue the RFP on 26 August 1991. However, in July, senior Army officials, including Secretary of the Army Michael Stone and Assistant Secretary of the Army for Research, Development, and Acquisition Stephen K. Conver, advised against issuing an industry-wide solicitation for the new training program until it was clear where funds would come from. At that time, the Army had approximately twelve programs competing for the same funds. Despite the visibility of the CCTT program, in the 1992 defense budget, the program did not receive funding as a separate line item. Rather it was included in the general \$104.9 million training systems account. In addition, the Army Science Board raised new technical questions as to whether the CCTT efforts were duplicating those of the SIMNET and Battlefield Distributed Simulation Technology program. Despite the Board's concerns, the Army requested that \$51 million be set aside for the CCTT. To that amount, the Senate Armed Services Committee added \$10 million. The variants of CCTT for aviation, engineers, etc. would be funded separately. On 28 October, Conver approved plans to issue a request for proposal (RFP) on the CCTT to industry. PM TRADE released the RFP on 19 November 1991. The CCTT program was expected to be the largest training program to appear over the next decade.<sup>61</sup>

For aviation training, an air networking (AIRNET) facility was located at Fort Rucker. In line with the simulation networking concept, the AIRNET facility featured eight networked simulators. In the future, the aviation equivalent of the CCTT for armor and infantry would expand the SIMNET capabilities. The training simulator for aircraft was known as the Aviation Combined Arms Tactical Trainer, or AVCATT. In 1991, the basis of issue plan was being reviewed in the light of changing force structure. Late in FY 1991, the training device requirement document was approved by TRADOC and AMC, and sent to Headquarters Department of the Army for final approval. As with the close combat tactical trainer the AVCATT was expected to be cost effective while compensating for fewer flying hours, reduced frequency of field training, and restrictions on the use of maneuver areas. The AVCATT, when fielded, would allow battalion-company and troop-squadron commanders to prepare their units for field exercises. If proficiency could be achieved through simulation, training dollars could be saved by reducing the number of expensive field training exercises. The new training simulator's features would be based on the needs of the scout and attack helicopter teams as identified by the Aviation Center. AVCATT was intended to be a medium to teach warfighting skills, not flying skills. Personnel using the device were expected to already be proficient in the flying of their individual aircraft.<sup>62</sup>

### **The Army Family of Simulations**

To take additional advantage of rapidly advancing technology, a "Family of Simulators (FAMSIM) Concept 2004" had been developed to link training simulation systems for maneuver battalion through echelons above corps. Each "member" of the family was designed to meet a specific need for command and control training at a

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61. (1) Defense News, 11 Feb 91, p. 4; 12 Aug 91, p. 25. (2) SSHR, ODCST, CY 91/II, p. 145.

62 (1) TRADOC ACH, CY 90, p. 182. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) Cpt Thomas J. Stafford and MW4 Frank Paul, Army Trainer, Winter 1991, pp. 51-53. (3) SSHR, ODCST, CY 91/II, pp. 128, 142.

specific echelon. By the end of 1989, the Army had six corps level sets, one of which was the National Simulation Center at Fort Leavenworth. Those systems were complemented by eleven of the older Army Training Battle Automated Simulation Systems (ARTBASS) and eleven Brigade-Battalion Simulation (BBS) systems already supporting the full spectrum of staff training and leader development. Tentative basis of issue plans were for the fielding of forty-seven systems among the active and reserve components and the branch schools. Such a configuration would allow active and reserve component units to be linked for command post exercises at home station without costly movement of personnel and equipment.<sup>63</sup>

Late in 1989, the Army began development of a FAMSIM Master Plan, designed to chart a course for command and control training from platoon through corps, down to the year 2004. The master plan, as revised at a FAMSIM conference, 13-16 August 1991, provided a single document that captured the major decisions and actions that affected the FAMSIM program. It also presented the resource requirements that would be necessary to design, develop, field, and enhance command and control synchronization training simulations. The goal was to develop equipment and software that would be common to all echelons, and to avoid duplication of effort. If the program was completed as planned, battalions and brigades training at homestation or at a combat training center could be linked through simulation to other battalions, brigades, divisions or corps training at homestation. Any unit would be able to "fight" the OPFOR located at Fort Leavenworth.<sup>64</sup>

As discussed above, the FAMSIM program linked a number of separate wargaming simulations. A model called "Janus" would provide simulation for the precommand course and for maneuver commanders. Janus had originally been developed by the Lawrence Livermore National Laboratory to support analysis. The system, however, proved to have a number of training applications. For that reason, training developers saw Janus as the official FAMSIM model to be used at company and platoon level and to train brigade and battalion commanders in synchronization of direct fire. The Janus software was successfully tested in the Tactical Commanders Development Course late in 1990 and early in 1991. Students training on Janus interacted directly with the workstations that formed the Janus system. Procurement of the system was approved in April 1991, with fielding scheduled to begin in FY 1993.<sup>65</sup>

Another of the training systems that made up the FAMSIM network was known as the "battalion-brigade battle simulation," or BBS. That system would train maneuver brigade and battalion commanders and staffs in command and control skills

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63. TRADOC ACH, CY 90, p. 182. (FOR OFFICIAL USE ONLY -- Info used is not protected)

64. Ibid.

65. (1) SSHR, ODCST, CY 91/I, p. 139. (2) Msg, Cdr CAC to distr, 231934Z Aug 90, subj: Janus Status, Doc V/19. (3) Msg, Cdr CAC to distr, 252145Z Jul 91, subj: Janus Use, Doc V/20. (4) Msg, Cdr TRADOC to distr, 061300Z, subj: Janus Fielding Priority, Doc V/21. (5) ATSC Pam 5-1, Training Support Programs, May 1991, p. 9.

under computer-driven simulated battle conditions. The primary function of the system was to simulate the execution of the actions and orders of the command and staff that would ordinarily be executed by subordinate commanders and their soldiers. The simulator was designed to replicate individual and collective tasks that applied all seven of the battlefield operating systems (BOS). The BBS was actually an update of the Army Training Battle Simulation System (ARTBASS)--a costly mobile system that had pioneered the computer-driven command post exercise (CPX) simulation. The system in use at the end of the year was an interim system called IBBS. That interim system was in use by the 24th Infantry Division at Fort Stewart, the Sergeants Major Academy, and at Hohenfels, Germany. An upgraded system was scheduled to be fielded to FORSCOM and Korea in FY 1992 and to the service schools in FY 1994.<sup>66</sup>

Another of the family of simulation was a model called Corps Battle Simulation (CBS) to be employed at division and corps levels. The CBS trained corps and division commanders and their battle staffs in command and control skills in the conduct of deep and AirLand Battle operations, with the use of simulated battle conditions. When development was complete, seven systems would be fielded--one per corps, one to Fort Leavenworth, and one to Eighth Army. An interim CBS was fielded in FY 1991. Plans were to use the system in support of REFORGER 92. Before that time, developers hoped to be able to solve problems with modeling the interaction between aircraft and air defense artillery. The replication of tactical road movement also required an upgrade. In the fall of 1991, AMC and TRADOC reached an agreement that the "objective" CBS would employ enhanced software and would be renamed "Warfighting Simulation 2000" (WARSIM 2000). Fielding for the upgraded system was scheduled for FY 1997-1999. That argument made particular sense given the Commanding General TRADOC's mandate that CATS would also address echelon above corps.<sup>67</sup>

At theater level, another member of FAMSIM was the Combat Service Support Training Simulation System (CSSTSS), which would be located at CASCOM. It, too, was a computer-driven simulation which would eventually be linked to the CBS. The CSSTSS request for proposal was released in February 1991. The contract was scheduled for award in the first quarter of FY 1992. Fielding was scheduled for 1995. Meanwhile, TRADOC looked with concern at a similar system being developed in USAREUR and called the Theater Transition Support Model. Did the Army need two echelon above corps logistics simulations? CASCOM assured the TRADOC commander that the two systems had different functions and that both were needed.

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66. Fact Sheet ATSH-TDS-I, 12 Aug 91, subj: Brigade and Battalion Simulation (BES). Doc V/22.

67. (1) SSHR, ODCST, CY 91/II, p. 145. (2) Msg, Cdr CAC to distr, 230844Z Sep 91, subj: Corps Battle Simulation (CBS), Doc V/23. (3) Msg, Cdr CAC to distr, 211850Z Nov 91, subj: Resolution of Corps Battle Simulation (CBS) Aviation/Air Defense Artillery (ADA) Issues, Doc V/24. (4) Msg, Cdr AMC to distr, 191900Z Dec 91, subj: Corps Battle Simulation Special Configuration Control Board (CCB) Results, Doc V/25.



At the end of the year, no definite decision on the fielding of both systems had been made.<sup>68</sup>

Also during 1991, TRADOC continued work on a system related to FAMSIM called "Panther." The new system was a two-tier low intensity conflict simulation designed to exercise a variety of training audiences. The first tier was a brigade-battalion staff trainer which stressed civil affairs, psychological operations, and human intelligence operations. Tier two trained United States country team members, unified command staffs, and high level host nation staffs in the development of long-range programs, plans, and projects at the operational and strategic levels. Panther scenarios could support peacekeeping operations, peacetime contingency operations, combating terrorism, and support for insurgency and counterinsurgency operations. At the end of the year, a counter-drug scenario was under development. Since 1989, the U.S. Army South had used Panther tier one for the Fuerzas Unidas series of exercises in Colombia, Ecuador, Peru, Bolivia, Chile, Paraguay, and Uruguay. Several U.S. Army and Army Reserve units had also used the system. The U.S. Army CGSC, the John F. Kennedy Special Warfare Center, and the Naval War College had used Panther as a seminar director.<sup>69</sup>

### Training Devices

Budget constraint and the need for realistic and effective training in peacetime led the Army to continue the development of devices to simulate tactical engagement and weapons effects. The principal vehicle for tactical engagement simulation in Army training was the Multiple Integrated Laser Engagement System, always known as MILES. Perhaps the most innovative and effective training device ever developed, MILES consisted of eye-safe laser transmitters that simulated live ammunition from direct fire weapons and laser detectors affixed on opposing troops weapons systems, and other equipment. The detectors were capable of signaling a "near miss," a "hit," or a "kill," thereby allowing for objective assessment of the survival of soldiers and units. In 1991, the development and fielding of MILES for aviation and air defense, called the Air Ground Engagement -- Air Defense (AGES/AD) system received high priority. AGES/AD II, an expansion of the basic MILES and AGES/AD I, included components that made it possible to deliver MILES for the AH-64 Apache, the OH-58D Kiowa, the UH-60 Black Hawk, CH-47D Chinook, and the Ground-Vehicle Laser Locator Designator. The new AGES/AD II devices would be interoperable with the currently deployed MILES devices. In a TRADOC reorganization in August 1990,

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68 (1) CAC Update, 23 May 91. (2) Msg. Cdr CASCOM, 090915Z Aug 91, subj: Combat Service Support Training Simulation System, Version 2.0 (CSSTSS 2.0) Status Update, Doc V/26 (3) Msg. Cdr TRADOC to Cdr CASCOM and DCG TNG CAC, 061130Z Sep 91, subj: Combat Service Support Training Simulation System (CSSTSS) and Theater Transition Support Model (TTSM), Doc V/27 (4) Msg. Cdr CASCOM to Cdr TRADOC and DCG TNG CAC, 191200Z Sep 91, subj: Combat Service Support Training Simulation System (CSSTSS) and Theater Transition and Sustainment Model (TTSM), Doc V/28

69 (1) CAC Update, 23 May 91 (2) Msg. Cdr CAC to distr, 041715Z Nov 91, subj: Panther Low Intensity Conflict Simulation Information Briefings/Demonstrations, Doc V/29

proponency for the MILES programs was transferred to the Combined Arms Command Training and integrated into the Simulated Area Weapons Effects-Radio Frequency and Global Positioning System (SAWE-RF-GPS/MILES II) program development.<sup>70</sup>

The early testing history of the AGES/AD II system was one of a myriad of technical shortcomings and a number of modifications. Testing in 1991 was more encouraging to training developers and the contractor, Loral Electro-Optical Systems. Technical testing began at Fort Huachuca in May 1991, and user testing took place at the National Training Center in July. In general, there were only minor problems. In September, a contract was awarded to Loral for limited production of the system to be fielded at the three combat training centers.<sup>71</sup>

For training closer to the ground, the Army Training Support Center continued development of the Precision Gunnery Training System (PGTS) (formerly the Tank Weapons Gunnery Simulation System (TWGSS)). The PGTS was a joint U.S. Army and U.S. Marine Corps program which encompassed both indoor and outdoor gunnery devices for the Dragon and TOW weapons systems. The devices were designed for individual and crew sustainment and weapons qualification or verification gunnery. The indoor system would consist of a weapons console and an instructor console. The instructor console would operate both the Dragon and TOW indoor weapons modules. The outdoor systems were precision laser gunnery systems capable of engaging target devices or vehicles with the appropriate mounted sensor mechanisms. At a special "user's evaluation" at Aberdeen Proving Ground in April 1991 it was determined that the test items did not conform to the contract requirements and panel participants agreed to negotiate another contract, albeit in the face of strong objections from the commandant of the Armor School. On 9 December 1991, a new request for proposal was issued.<sup>72</sup>

A major initiative for the Training and Doctrine Command in 1991 was the award of a contract to Loral Corp. for development of the Mobile Automated Instrumentation Suite (MAIS), a system which like MILES was a laser-based tactical engagement system. Unlike MILES, which Loral had designed for use in Army training centers, MAIS featured a mobile command, control, and communications center that allowed trainers to set up a "battlefield" anywhere. Under the \$38 million contract, awarded 1 August 1991, Loral would design and manufacture 250 laser transmitters and detectors that could be attached to vehicles, aircraft, weapons systems, and

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70. (1) ATSC Pam 5-1, Training Support Programs, May 1991. (2) TRADOC ACH 90, p. 185 (FOR OFFICIAL USE ONLY -- Info used is not protected)

71. (1) SSHR, ODCST, CY 91/I, p. 139; CY 91/II, p. 144. (2) Msgs, Cdr AMC to distr, 172000Z May 91; 131500Z May 91; 241945Z May 91; subj: SAWE-RF/MILES II Test Update, Docs V/30, V/31, V/32.

72. (1) SSHR, ODCST, CY 91/I, p. 128; CY 91/II, p. 143. (2) ATSC Pam 5-1. (3) Msg, Cmdt Armor School to distr, 161245Z Jul 91, subj: Tank Weapons Gunnery Simulation System/Precision Gunnery System (TWGSS/PGS), Doc V/33.

infantry personnel. MAIS was designed to support 2,000 instrumented players and to fully integrate instrumented close air support.<sup>73</sup>

A major development in the field of tactical engagement simulation was a system called Precision Range Integrated Maneuver Exercise (PRIME). The PRIME was a device-based training system being procured by PM TRADE for armor and mechanized infantry units. Simply put, the PRIME was designed to enhance the technical capabilities of the MILES for the M1 Abrams and the M2 and M3 Bradley Fighting Vehicles, the laser target interface devices, and the Automatic Tank Target System. The technical enhancements of PRIME included an improved MILES, a Global Positioning System, a Thru-Sight Video Subsystem, and a range control computer. The PRIME had the potential to support individual, crew, and platoon tactical and gunnery skills training in the areas of fire distribution, maneuver, command and control, and target acquisition and identification. It achieved that purpose by providing units with objective "real time" data collection and analysis for immediate "feedback" during training and during the unit's after action review. In general, PRIME was a means whereby armor and mechanized infantry units could conduct training under conditions that replicated collective task performances in a combat environment. The PRIME commercial training device requirement, approved by the TRADOC Deputy Chief of Staff for Training on 14 August 1991, included a requirement for a company PRIME set for USAREUR.<sup>74</sup>

#### **Distributed Training Program**

The Distributed Training Program (DTP) remained a top priority of the Training and Doctrine Command in 1991. The DTP was mandated by the Army Long Range Training Plan (ALRTP) and was a viable complement to resident training. Resident Training could be distributed to more students, when and where needed, by using available multimedia technologies more effectively and efficiently. The savings thus achieved would be used to pay for the new technology.

While initial program guidance focused heavily on cost savings, the TRADOC Commander refocused program goals in 1991. Those goals included bringing students to a common level of knowledge prior to resident training, filling the gap between resident training periods, addressing individual training requirements for units in the field, finding more efficient ways to train better, and producing challenged and prepared soldiers. The DTP was a total force program supporting the active and reserve components. TRADOC conducted an extensive Reserve Component Survey in 1991 to determine the overall training impact of the DTP with respect to the Army National Guard and U.S. Army Reserve. Results of the survey indicated that the reserve components believed that the DTP would improve their training opportunities and help resolve problems unique to the reserve components.

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73. (1) Briefing Slides, Loral Space and Range Systems, September 1991, Doc V/34.  
(2) Defense News, 12 Aug 91, p. 24.

74. (1) SSHR, ODCST, CY 91/II, pp. 101-02. (2) ARI Fort Knox Field Unit Training Research Laboratory, "Precision Range Integrated Maneuver Exercise (PRIME) User's Guide, January 1991.

Phase one of the DTP included the multimedia training Technology Pilot Tests (FY 1990-1991) and Army-wide Print Pilot Tests (FY 1992-1994). During 1991 more than ten multimedia technology pilots were evaluated by TRADOC Analysis Command (TRAC), and emerging results indicated that the training effectiveness of DTP equaled or exceeded that of the traditional classroom. The Army-wide pilot test phase included over 60 courses that would be implemented by TRADOC schools beginning in FY 1992. An in-depth evaluation of eight courses of various types would be conducted by TRADOC. In support of later phases in the DTP, TRADOC funded 9 computer assisted instruction (CIA) courses at various schools to be implemented in the resident course.

Phase two of the DTP (FY 1994-1997) would include army program initiation (print) and early employment of multimedia. Over 70 courses were scheduled beginning in FY 1994. Additionally, numerous proposals were received from TRADOC schools requesting E2M2. Those were pending funding approval.

Phases three and four of the DTP (FY 1998-2007) would include the Army-wide implementation of multimedia. A total of 344 learning centers and 845 classrooms would be required worldwide to support those phases. Site surveys would be conducted to determine exact locations and equipment and upgrade requirements of existing facilities. Because of the dollar amount required for communications, automation equipment, and software, the DTP was reviewed by the Major army Information Systems Review Council (MAISRC) in April 1991. The council approved milestone zero and the continuation of "proof of principle" pilots and the paper-based phase of the DTP in preparation of the "equipment intensive" phase that would begin in FY 1998). Through all the phases, the DTP would receive the scrutiny of the Combined Arms Training Strategy (CATS), discussed above. The CATS would provide a means of determining what tasks should be training, what methodologies could do the training, and which of these should be chosen, given the resources available.

On 4 October 1991, the Deputy Chief of Staff for Training directed the formation of the Distributed Training Office (DTO) at the Army Training Support Center, Fort Eustis. The new office was formed to manage the implementation of the DTP in the near future. TRADOC would remain responsible for policy formulation.<sup>75</sup>

### **Embedded Training**

Central to the development and improvement of training on systems was the concept of embedded training (ET)--the capability incorporated into the system itself from drawing board to field assignment or added to the weapons system. Training could thereby be engaged as the equipment was manned without wear and tear on the system or expenditure of ammunition. A system with embedded training capability might or might not have training devices or simulators. The Army's need for this

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75.(1) TRADOC ACH, CY 90 pp. 189-90. (FOR OFFICIAL USE ONLY--Info used is not protected) (2) SSHR, ODCST, CY 91/I, p. 80; CY 91/II, pp. 169-70 (3) Briefing slides, Distributed Training, TRADOC Lison Officers' Conference, 26-30 Aug 91, Hampton, Va., Doc V/35. (4) Phonecon with Lt Col Charles W. Samuelson, ODCST, 16 Jun 92. (5) TRADOC Long Range Training Plan (coordinating Draft), 12 Dec 90, Doc V/36.

"top-down" approach to the development of training systems to support new weapons systems had been reported by the Army Science Board in 1985. The concept was officially sanctioned in a policy letter by the then Vice Chief of Staff of the Army, General Maxwell R. Thurman, and Under Secretary of the Army James R. Ambrose on 3 March 1987:

An embedded training capability will be thoroughly evaluated and considered as the preferred alternative among other approaches to the incorporation of training sub-systems in the development and follow on Product Improvement Programs of all Army materiel systems.

During 1988, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) had published and distributed a ten volume set of procedural manuals which outlined the "how to" of selection, development, and fielding of embedded training devices. Central to that process was the decision as to what type of training to embed in the weapons system itself and what should be trained by other means. Thus the concept of CATS, discussed above, was especially applicable to the consideration of embedded training.<sup>76</sup>

While the concept of embedded training had been in existence for some time, instances of its successful implementation in Army systems were relatively rare in 1991. The emphasis on ET was increasing, however, as a result of changes in Army policy, practice, and weapons systems. First, realistic unit training was being emphasized as a means to better prepare U.S. forces for combat operations. In addition, cost reduction had become mandatory at the same time as costs resulting from the use of actual weapons systems for training were increasing. Another factor was the increasing number of systems with embedded computer capability that could support training if designed appropriately. As the decade of the 1990s began, the Army was evaluating the potential for embedded training equipment in its Armored Systems Modernization (ASM) program, a campaign to field a family of armored vehicles built on common chassis. Fielding of the first set of vehicles was scheduled for 1995 through 1998. Embedded training requirements identified in the operational and organizational plans for each variant were transferred to contracting documents. Meanwhile, training developers cautioned that ET usually would not satisfy all the training needs for a system. The embedded training system would therefore be only one component of a total training system.<sup>77</sup>

### **Reserve Component Training**

Operations Desert Shield and Desert Storm, reductions in the force due to a dramatically changed world, and a realization that United States forces would likely have to respond to a wide range of contingency possibilities, had led to a reexamination as to how and for what the Army should train the reserve components (RC) in a premobilization environment. As the Army faced a future with a much smaller

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76. (1) ARI, PM TRADE Field Unit at Orlando Florida Training Research Laboratory, "A Guide for Early Embedded Training Decisions," June 1991.

77. Ibid

force, the meaning of the term "Total Army" took on greater significance. Increasingly, a small active duty force would be augmented with reserve component forces. In the operations in the Persian Gulf region, 146,855 RC personnel (more than 1.045 U.S. Army National Guard and Reserve units) had been deployed in support of the war. In the event of full mobilization, the U.S. Army Reserve, the Army National Guard, and the Individual Ready Reserves would make up 70 percent of the deploying force. The Army was acutely aware that limited time, dispersion, personnel turnover, and the complex command and control structure made training the reserve components a real challenge. The ways and means of executing an efficient and effective training program would only become more complicated in the face of force structure changes and an increasingly smaller budget.<sup>78</sup>

A comprehensive Reserve Component Training Strategy had been formalized by the Army in 1989 to enhance the ability of RC units to meet their wartime requirements. By the end of 1991, significant strides had been made in maximizing the use of limited RC training time. The strategy established the RC training goal to produce reserve component units trained to mobilize, deploy, fight, and win. Implementation was based upon the five dimensions of training: soldier, leader, and unit training; training support; and training management. The principal focus was on developing and maintaining task proficiency at battalion level and lower. The RC Training Development Action Plan (RC TDAP), adopted in May 1989, implemented the RC Training Strategy. The plan focused on thirty-seven issues that affected the conduct of realistic and effective training in the RC. Of particular significance were changes in the RC Noncommissioned Officer Education System (RC-NCOES) and the RC Officer Education System (RC-OES). As with the active component, the new strategy called for a much greater reliance on distributed training methods.<sup>79</sup>

Of special concern in 1991 were the changes in the RC OES. TRADOC service schools, including the JFK Special Operations Warfare Center and School and the Academy of Health Sciences, continued operations to develop the RC Officer Advanced Course (RC-OAC). The new course included two phases: phase one was taken as a correspondence course, phase two was completed during two weeks of active duty. The course would be fully in place by FY 1994. The Command and General Staff College supported fifty RC-CAS<sup>3</sup> staff groups during FY 1991 and developed a special alternative second phase of the program which substituted eight weekends of inactive duty for training for two weeks of active duty for training. U.S. Army Reserve Forces (USARF) schools would no longer conduct any part of OAC, that responsibility falling to the proponent schools. USARF schools maintained responsibility for CAS<sup>3</sup>, which became mandatory for promotion to major. A new RC

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78 (1) Lt Col Thomas R. Rozman, "Rethinking Readying the Reserves for War," Army, March 1992. (2) Lt Col John L. Craig, "Reserve Forces Mobilization: A Mobilization Assistance Team's After-Action Review," Army Trainer, Fall 1991.

79. Army Posture Statement, February 1991, p. 57-58.

Command and General Staff College Officers Course was being developed by the CGSC for implementation in FY 1994 and FY 1995.<sup>80</sup>

During the year, TRADOC and FORSCOM cooperated in the complete revision of FORSCOM TRADOC Regulation 135-3, Reserve Forces Schools. The revision was undertaken in order to incorporate significant changes in training doctrine, including the new version of the Officer Advanced Course and the introduction of CAS<sup>3</sup> as a mandatory training requirement of the RC. The revised regulation also reflected new requirements for RC NCOES, the linking of RC NCOES to promotions, and the deletion of warrant officer training from reserve forces schools. At a meeting in Hampton, Va in March 1991, users reviewed an initial draft of the new policy. Following review by both commands in June, the regulation was staffed to the major commands in the July-September period.<sup>81</sup>

The Army also continued to develop special regional training centers. Beginning in 1985, twenty-one regional training centers for maintenance (RTC-Maint) were planned. In 1991, seventeen of the centers were in operation. The remainder awaited the lifting of the FY 1990-1991 construction freeze. To meet the need for realistic training opportunities in mass trauma for Army medical specialists, regional training sites for medical skills (RTS Med) were established. Sixty-eight percent of the Army's hospital units were in the reserve components. Reliance on those units in the build-up of Army medical capability for Operation Desert Storm underscored the requirement to insure high states of readiness for those units. Although not a regional center, the High Technology Training Center (HTTC) at Fort Dix was equipped with training devices and simulators usually not available at most RC unit home stations. During 1991, the center provided 105 course offerings to individuals, small units, and battle staff members.<sup>82</sup>

The Eastern and Western ARNG Aviation Training Sites provided a cost-effective, efficient, and professional environment for training ARNG aviation personnel. The eastern center specialized in individual training in utility, cargo, and fixed-wing aircraft. The western center specialized in individual training in attack and aeroscout aircraft and operated an AH-1 simulator. Both training sites were authorized to conduct instructor pilot training in selected aircraft.<sup>83</sup>

Overseas deployment training (ODT) for the reserve components provided participating units and individual soldiers an opportunity to conduct mobilization deployment activities, tailor peacetime training to wartime requirements, and strengthen associations with active units. Participants became familiar with the political climate, the terrain, and the people of their assigned wartime theaters. In some cases, the

80 (1) SSHR ODCST, CY 91 I, p. 12. (2) For a detailed description of the revised OAC, CAS<sup>3</sup>, and CGSOC, see TRADOC ACH, CY 90, pp. 194-96. (FOR OFFICIAL USE ONLY. Info used is not protected.)

81 SSHR ODCST, CY 91 I, pp. 17-18.

82 Army Posture Statement, February 1991, p. 58.

83 Ibid.

host country received humanitarian assistance. In 1991, ODT was reduced in scope as a result of the Persian Gulf operations. ODT for FY 1992 was projected to return to the normal level of nearly 40,000 participants annually. Army commanders strongly supported ODT, recognizing it as a highly visible demonstration of the Army's resolve to support overseas commitments to all of the allies of the United States and to emerging nations in need of humanitarian assistance.<sup>84</sup>

Training for MOS qualification and the individual proficiency of RC soldiers and officers continued to be one of the highest training priority at all levels of command. The Army's objectives were to increase MOS proficiency while reducing the burden of individual training on RC units. To that end, TRADOC developed skill qualification tests (SQT) specifically designed to meet RC needs. The TRADOC service schools as proponents for the various SQTs eliminated all tasks that were not essential in wartime. A system was also set up to identify and eliminate all tasks not relevant to a unit's mission or specific equipment assignments. The new reserve component SQTs were generally well received by the RC force. However, the effort to tailor the SQTs for RC use would, in 1993, fall victim to the adoption of the self-development test (SDT), discussed above. One of the goals of the SDT was to broaden the NCO's knowledge across his MOS.<sup>85</sup>

On 26 April 1991, General Foss approved a concept in principle known as "Shadow TRADOC." Shadow TRADOC was a plan designed to expand the active component training base and improve individual training using USAR training divisions and U.S. Army Reserve Forces schools. The TRADOC Deputy Chief of Staff for Training approved a concept submission to Forces Command on 12 July 1991. Because of the changing strategic environment that focused on regional rather than global response, Shadow TRADOC was designed to enhance the total force's partial mobilization readiness and capability. In the second half of the year, Shadow TRADOC was renamed "Training Enhancement and Mobilization Upgrade (TEAM-UP)." TEAM-UP efforts in 1991 included incorporating that project's efforts and those of Bold Shift, discussed above.<sup>86</sup>

In September 1989, General Carl E. Vuono, Chief of Staff of the Army, directed that appropriate actions be taken to insure the quality of reserve component training institutions (RCTI). During the period October 1990 through January 1991, representatives of Headquarters Department of the Army, FORSCOM, TRADOC, the National Guard Bureau, and the Office of the Chief, Army Reserve developed and staffed a concept for a comprehensive RCTI quality assurance program. The new program, if implemented, would provide for formal accreditation of all RC training institutions, much like the program already in place for active component schools. The impetus for an accreditation program came from concerns of the Army Chief of Staff, the

<sup>84</sup> Ibid., p. 59.

<sup>85</sup> (1) Msg. Cdr TRADOC to HQDA, 031335Z Dec 91, subj: Self-Development Test [SDT] Implementation Issues for the Reserve Component, Doc V/37. (2) TRADOC ACH, CY 90, p. 194. (FOR OFFICIAL USE ONLY -- Info used is not protected)

<sup>86</sup> (1) Briefing Slides, VCSA Visit to TRADOC, 4 Jun 91, Doc V/38. (2) SSRR, ODCST, CY 91/I, p. 16, CY 91/II, p. 14.



Deputy Chief, Army Reserve, and the Chief of the National Guard Bureau over the quality and standardization of the training being conducted in a growing number of training organizations with widely varying charters. Although virtually all the institutions taught courses developed by the TRADOC service schools, no mechanism existed to insure the ability of such widely dispersed and vastly differing organizations to amass the necessary resources such as instructors, equipment, classrooms, and teaching aids. The new program featured accreditation teams at each of the numbered armies in the continental United States. It was expected that each team could complete a 100 percent visitation circuit in two to three years. Each team would visit each RC training institution in its geographic area and evaluate all courses being taught at that time. In January 1991, the TRADOC commander approved the program and on 12 April of that year, the FORSCOM commander concurred with the implementation of the plan. A pilot test to validate the accreditation concept was conducted from May through September 1991. The results from the test indicated the program was feasible.<sup>87</sup>

The reserve components employed automation in the management of training through the Reserve Component Automation System (RCAS). RCAS was a congressionally-mandated automated information system designed to support the decision-making needs of all commanders, their staffs, and functional managers responsible for RC forces. The Chief of the National Guard Bureau, acting through the RCAS program manager, was charged to design, develop, and field the system in order to improve the capability of the RC to mobilize. When fully operational, the RCAS would employ advanced office automation, telecommunication, and distributed data bases to provide information for the planning and execution of mobilization and for improved methods of routine administration. A contract for the system was awarded late in 1991 to Bring Computer Services.<sup>88</sup>

During 1991, the Army National Guard and the Defense Advanced Research Projects Agency (DARPA) jointly began development of a simulation-based training environment for Army National Guard roundout and roundup brigades. The idea was to apply the Combined Arms Training Strategy (CATS), discussed above, to the improvement in effectiveness and efficiency of unit training. The goals of the project were to compress one week of annual training into one weekend of inactive duty training and 60 days of post-mobilization training into 15-30 days of training. The focus was at company level and below, and the development of battalion and brigade commanders and their staffs within the roundout and roundup brigades. In designing the advanced simulation-based training, developers sought to reduce the time required to train specific tasks; to "distribute" training to armories and even soldiers' homes; to develop new low-cost technologies; and to focus on high priority tasks

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87. (1) Fact Sheet, ODCST, QAD, 17 Jan 92, subj: New Reserve Component Training Institution (RCTI) Quality Assurance Program. (2) TRADOC ACH, CY 90, pp. 196-97. (FOR OFFICIAL USE ONLY -- Info used is not protected)

88. (1) SSHR, ODCST, CY 91/II, p. 174. (2) TRADOC ACH, CY 90, p. 197. (FOR OFFICIAL USE ONLY -- Info used is not protected)

while maintaining standards. The Army National Guard "CATS enhancement" program would be developed in three phases from FY 1992 through FY 1995.<sup>89</sup>

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89. Fact Sheet ATTG-U, 10 Jan 92, subj: ARNG CATS Enhancement, Doc V/39.

Appendix A

HEADQUARTERS TRADOC STAFF DIRECTORY

September 1991













ann	Secy	4451
COMMERCIAL ACTIVITIES MGT DIR		
ATRM-C, Bldg 5G, FAX 4397		
Dir	3738	
Secy	2271	
Program Mgt Div		
Ch	3234	
Operations Div		
Ch	3235	
TRADOC MGMT ENGR ACTV		
HAMEA), ATRM-T, Bldg 5F, FAX 4397		
Dir	2938	
Ch, Ops Br	3224	
Ch, Studies Br	3503	
Tm Liaison	3224	
Field Teams		
Ch, Benning	835-5746	
Ch, Bliss	978-1889	
Ch, Eustis	927-4541	
Ch, Huachuca	821-1985	
Ch, Jackson	734-5929	
Ch, Knorr	484-3840	
Ch, Lvnworth	552-5414	
Ch, Lee	887-2527	
Ch, McClellan	865-5354	
Ch, Sil	839-8064	
Ch, L Wood	581-7126	

## DCS ANALYSIS

ATAN, Ft Leavenworth, KS, Bldg 52		
gemann	DCSA	AV 582-6132
ADCSA, ATAN-ZA		
Bldg 11, FAX 4394		
ADCSA	5803	
Adtg ADCSA	5803	
XO	5827	
Exec Asst	5803	
Security	5828	
Cost & Resource Mgt Otc, ATAN-ZC		
Ch	5803	
Information Mgt/Admin Otc, ATAN-ZI		
IMO	5822	
ANALYSIS DIR, ATAN-A		
Dir	5846	
Analysis Dir, ATAN-AA		
Ch	5838	
Analysis Policy Div, ATAN-AP		
Ch	5837	
STUDY PROGRAM DIR, ATAN-S		
Dir	5846	
RADOC Study Program Mgt Div, ATAN-SM		
Ch	5812	
RAND/TRAC Research Otc, ATAN-SR		
Ch	5832	
Registrier	ORSA	(202) 298-0000
Malley	ORSA	(213) 383-0411

## DCS INFORMATION MANAGEMENT

USARMC-TRADOC		
ATIM, Bldg 100, FAX 2086		
Hz-Enz	DCSM/CDR	(38) 2138
elps	Secy	2138
Stubblefield	CSM	3880
ennington	Rearl	2331
ADCSM, ATIM-ZA		
ADCSM	(29) 2138	
ISO	4030	
XO, ATIM-ZX		
XO	4127	
IMA TECH OTC, ATIM-ZT		
Ch	4014	
ADMIN & PERS DIV		
ATIM-A		
Ch	4201	
RESOURCE MGMT DIV		
ATIM-R		
Ch	2011	

Ms Rowe	Exec Asst	3021
Ops & Admin Br, ATIG-ZXA, FAX 4313		
Ms Brumback	Ch	4211
Inspections Br, ATIG-I		
LTC Hendrix	Ch	3042
Asst & Inves Br, ATIG-A		
LTC Pritchard	Ch	4217
16 OFC, INTERNAL REVIEW & AUDIT COMPLIANCE		
ATIR, Bldg 247, FAX 3614		
Mr Slayton	Ch	(45) 3086**
Mr Waller	Supv Auditor	3087
Mr Procopi	Audit Mgr	3946
Mr Gentry	Standards	3975
Mrs Ripple	Secy	2291

## 17 COMMAND HISTORIAN

ATMH, Casemate 21		
Dr Malone	Ch Hist	3781
Hist Studies & Publ		
Ch	3781	
Dr Chapman	Resch Hist	3781
Hist Programs & Policy		
Ch	3781	
Dr Stensvaag	Archivist	3781
Dr Canedy	Archives Tech	3525
Mr Mason III		
Hist Property & Museums		
Ch	3781	

## 18 POST COMMANDER

ATZG, Bldg 77, FAX 3521		
COL Wette	Cdr	(51) 3241
Mrs Parkoke	CEA	3241
CSM Carey	CSM	2957
Mr Lassiter	ISO	3680
Mrs O'Brien	TAC, Bldg 98	4231
Ms Kellihan	Admin Off	2175
SFC Robinson	PAC, Bldg 98	2442
LTC Minickler	DIS, Bldg 28	3807
Mr Sahme	DIS-L, Bldg 28	4151
MAJ Patrick	DRM, Bldg 105	2006
Mr Ryan	DOC, Bldg T-195	2630
CPT Hutson	JA	3618
Ms Meyers	PAO	3205
COL Alvarez	DHS, Bldg 82	2201
COL Harvey	CHS, Bldg 82	2835
CH(COL) Holley	CH, CM 21	2811
Mr Heilman	DPCA, Bldg T-183	3737
Mr MacGillivray	Fin Mgt-DPCA, Bldg T-182	4115
Mr VanPatten	Comm Opts, Bldg T-182	2712
LTC Derouen	PM, Bldg 87	2220
Ms Gooch	Acting EEO, Bldg 173	3500
Ms Patterson	IRAC, Bldg 174	2059
Mr Vantree	PSO, Bldg 28	2089
Mr Mroczkowski	Museum Curator, CM 20	3973
Mr Richardson	Trans Off, Bldg 57	4383
Ms Angell	PBO, Bldg T-104	3330
Mr Vernon	FMOC, Bldg 185	2408
Ms White	Contl Cen, Bldg 38	2798
Fire Department	EMERGENCY	2287
Family Housing	Bldg T-179	2127
Housing Referral	Bldg T-179	2129
Billing	Bldg T-179	2128
Office Machine Repair		2458
Work Orders		4228
Post Staff Duty Off	Bldg 87	4290

HMC USATRADOC & FT MONROE, Bldg T-198		
CPT Burnes	Cdr	4171
MP ACTIVITY, Bldg 87		
CPT Ammann	Cdr	2822
THE US CONTINENTAL ARMY BAND, Bldg 139		
CPT Gariette	Cdr	3888
FLT DEY, LAFB, Bldg 371		
Mr Caldwell	Dir	3707
FT MONROE COMP TEAM, Bldg 86		
CW4 Martin	Ch	2538
SFC Batts	Off Br	2511
SSG Newman	Ent Br	2014
Mr Sanchez	Passports/IDs	2980

ATFE, Chamberlin Hotel, Suite 200		
LTC Shannon, CDR		(82) 3168
MAJ Soulsby, XO		3168
SFC Knight		3168
Mrs Epling, Admin		3370
Ms Limandri		3370
Command/Activity		
UNC/CFC/USFK/EUSA, Seoul, KO	Yongsan 315-723-4881/4882	
ROKA TRADOC, Taejeon, KO	315-769-3457	
USAREUR & 7th Army, Heidelberg, GE	370-6588/8791	
JGSDF Staff College, Tokyo, JA	229-3387	
USARJ, Camp Zama, JA	233-3283/4579	
GE Gen Army Otc, Cologne, GE (SR LO)	049-221-370011 Ext 3494	
GE Gen Army Otc, Cologne, GE (LOG LO)	049-221-370011 Ext 3383	
GE Gen Army Otc, Cologne, GE (CD LO)	049-221-370011 Ext 3410	
GE Gen Army Otc, Cologne, GE (TNG LO)	049-221-370011 Ext 3410	
GE Armour Sch, Munster, GE	0-49-5192-8607	
GE Artillery Sch, IDAR Oberstein, GE	049-6781-25021 Ext 427	
GE Aviation Sch, Bueckeburg, GE	049-5722-4001 Ext 332	
GE AFCS, Hamburg, GE	049-4088671 Ext 2114	
GE Engineer Sch, Munich, GE	049-89-95714-206	
GE Infantry Sch, Hammelburg, GE	049-9732-8111 Ext 208	
GE NBC Sch, Sonthofen, GE	049-8321-8090 Ext 230	
GE Ord/Maint Sch, Aachen, GE	049-241-581-2125	
GE Signal Sch, Feldafing, GE	049-8157-27-203	
GE Army Supply Sch, Bremen, GE	049-421-622011 Ext 1518	
GE Long Range Recon Patrol Sch	049-751-51817	
GE Tactics Center, Hanover, GE	049-511-632071 Ext 405	
MOD UK/USARMS GP-UK, London, EN	044-278-63344 Ext 2880	
BR Army Staff College, Camberley, EN	044-278-63344 Ext 2882	
Chief, Training Arms Dir, Wilton, EN	044-0722-38622 Ext 2373	
Soviet Stud Res Inst, Camberley, EN	044-278-63344 Ext 2373	
FR Army HQ & Fr War College, Paris, FR	0331-4555-3587	
FR War College, Paris, FR	0331-4753-9931	
FR Armor Sch, Saumur, FR	041-510543 Ext 350	
FR Artillery Sch, Draguignan, FR	064-685457 Ext 3118	
FR Engineer Sch, Angers, FR	041-888336 Ext 405	
FR Infantry Sch, Montpellier, FR	033-67-425233 Ext 619	
FR Aviation Sch, Leluc, FR	094-607484 Ext 514	
FR Sig Sch	038-850796 Ext 530	
Canadian Nat Def HQ, Ottawa, CA	849-0137	
DCSOPS, Italian Army, Rome, IT	011-386-4735-7355	
AVSCOM/TROSCOM, St Louis, MO	683-1515/1516	
MCDEC, Quantico, VA	278-3106	
AWS, Scott AFB, IL	576-4783/4781	
SOUTHCOM, Ft Clayton, Panama	287-6211/6212	
Israeli Field Units Tng Ctr, Za Elm, IS	092-057-38384	
Spanish Escuela Superior	341-441-7500	
Turkish Land Forces Tng Ctrd, Ankara, TU	090-4-350-9797 Ext 2189	
WESTCOM	9-1-808-438-7700	
Huntsville, AL	746-2001	

AUTOVON (except numbers beginning with "o" which are commercial)

## FREQUENTLY CALLED NUMBERS

## EMERGENCY

Fire Department ..... 2287

## Appendix B

### KEY PERSONNEL HEADQUARTERS TRADOC 1 January - 31 December 1991

<u>Position</u>	<u>Name</u>	<u>Dates</u>
<u>COMMAND GROUP</u>		
Commanding General	GEN JW Foss	2 Aug 89 - 22 Aug 91
	GEN FM Franks	23 Aug 91 -
Scientific Advisor	Dr. PJ Berenson	10 Oct 89 -
Executive to the Commanding General	COL GA Crocker	14 Aug 90 - 11 Jul 91
	COL ME Jallo	12 Jul 91 - 5 Sep 91
	COL (P) MJ Boyd	6 Sep 91 -
Chief, Commander's Planning Group	COL ME Jallo	22 Oct 90 - 4 Sep 91
	COL CE Beckwith	5 Sep 91 -
DCG/CDR Combined Arms Command	LTG LP Wishart III	6 Aug 90 - 15 Aug 91
	LTG WA Shoffner	16 Aug 91 -
DCG/CDR Combined Arms Support Command	LTG LE Salomon	6 Aug 90 -
DCG for U.S. Army Reserve	MG RE Hammond	20 Jul 87 - 30 Jan 91
	MG JH Mukoyama, Jr.	1 May 91 -
DCG for Army National Guard	MG JM Miller	1 Jan 89 -
DCG/Chief of Staff	MG JW van Loben Sels	28 Jul 89 - 13 Sep 91
	MG CA Hagan (interim)	14 Sep 91 - 16 Oct 91
	MG HM Hagwood (interim)	17 Oct 91 - 11 Nov 91
	MG DM Lionetti	12 Nov 91 -
Assistant Cofs	COL LR Bixler	6 Aug 90 - 5 Aug 91
	COL AF Caggiano	6 Aug 91 -
Command Sergeant Major	CSM HJ Goodwin	16 Oct 87 - 30 Apr 91
	CSM WE Woodall	1 May 91 -

# GENERAL STAFF

DCS for Base Operations Support	MG RL Dilworth BG PY Chinen	6 Aug 90 - 16 Jun 91 16 Jun 91 -
Assistant DCS for Base Operations Support-HR	Ms. Toni Wainwright Mr. P Dolezal	18 Dec 89 - 3 Aug 91 22 Sep 91 -
Assistant DCS for Base Operations Support-Ops	COL NW Meoni COL TE O'Malley	6 Aug 90 - 30 Sep 91 1 Oct 91 -
DCS for Concepts, Doc- trine and Developments	MG S Silvasy, Jr. MG WK Clark	6 Aug 90 - 1 Oct 91 2 Oct 91 -
Assistant DCS for Concepts, Doctrine and Developments	COL DT Stephenson	1 Nov 90 -
Assistant DCS for Concepts and Doctrine	BG TJ Grogan	6 Aug 90 -
Assistant DCS for Developments	COL JF Brickman BG RH Scales	4 Sep 90 - 2 Oct 91 3 Oct 91 -
DCS for Resource Management	MG HM Hagwood, Jr.	11 Sep 89 -
Assistant DCS for Resource Management	Mr. MA Frantz, Jr.	1 Aug 89 -
DCS for Training	MG CA Hagan MG DP Malcor	16 Dec 89 - 13 Sep 91 14 Sep 91 -
Assistant DCS for Training-Operations	BG DP Malcor COL SK Wasaff, Jr.	21 Aug 89 - 30 Oct 91 31 Oct 91 -
Assistant DCS for Training-Programs	Mr. TJ Edwards	1 Jan 89 -
DCS for Information Management	COL D. Fitz-Enz	15 Feb 90 -

DCS for Analysis	BG RW Tragemann*	1 Nov 90 -
Assistant DCS for Analysis	COL WA Brinkley	1 Sep 85 - 20 Jun 91
(Acting)	Mr. K Carson	21 Jun 91 - 1 Dec 91
	COL DS Blodgett	2 Dec 91 -

\*Also Commander, TRADOC Analysis Command.

#### SPECIAL STAFF

Ch, Public Affairs	COL AJ Caggiano	1 Aug 87 - 5 Aug 91
	COL GH Stinnett	6 Aug 91 -
Ch, Internal Review and Audit Compliance	Mr. FW Slayton*	13 Jan 88 - 25 Jul 91
(Acting)	Mr. GE Waller	26 Jul 91 -
Chief Historian	Dr. HO Malone, Jr.	7 Jun 81 -
Command Safety Officer	Mr. GW Morgan	1 Oct 86 -
Inspector General	Col HF Lynch	22 Oct 90 - 15 Jul 91
(interim)	LTC Pritchard	16 Jul 91 - 26 Sep 91
	COL FL Perry	27 Sep 91 -
Staff Judge Advocate	COL JO Smyser	9 Jul 90 -

\*Detailed for special assignment to 22d Support Command in SW Asia from 25 July 1991.

## APPENDIX C

### PRINCIPAL SUBORDINATE COMMANDERS AND COMMANDANTS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND As of 31 December 1991

#### Major Subordinate Commands and Installations

FT Leavenworth/Combined Arms Command	LTG W. A. Shoffner
FT Lee/Combined Arms Support Command	LTG S. N. Wakefield
HQ ROTC Cadet Command, FT Monroe, VA	MG W. C. Arnold
TRADOC Analysis Command, Ft Leavenworth, KS	BG R. W. Tragemann
FT Ben Harrison/Soldier Support Center	MG R. E. Brooks
FT Benning/Infantry Center	MG J. A. White
FT Bliss/Air Defense Artillery Center Carlisle Barracks	MG J. H. Little
FT Dix/Training Center	MG W. A. Stofft
FT Eustis/Transportation Center	MG J. P. Herrling
FT Gordon/Signal Center	MG K. R. Wykle
FT Huachuca/Intelligence Center	MG R. E. Gray
FT Jackson/Training Center	MG P. E. Menoher, Jr.
FT Knox/Armor Center	MG R. F. Siegfried
FT Leonard Wood/Engineer Center	MG T. C. Foley
FT McClellan/Chemical-Mil Police Center	MG D. W. Christman
FT Monroe	MG C. A. Hines
FT Rucker/Aviation Center	COL R. R. Wolfe
FT Sill/Field Artillery Center	MG J.D. Robinson
	MG F. F. Marty

#### TRADOC Military Schools and Colleges

Army Logistics Management College, FT Lee, VA	COL T. C. Wakefield
Army Management Staff College, FT Belvoir, VA	COL A. F. Bondshu
Command and General Staff College, FT Leavenworth, KS	LTG W. A. Shoffner
Defense Information School, FT Ben Harrison, IN	COL R. O. Hahn
Defense Language Institute Foreign Language Center, Presidio of Monterey, CA	COL D. C. Fischer, Jr.
Sergeant Major Academy, Ft Bliss, TX	COL F. E. Van Horn

#### TRADOC Branch Schools

Adjutant General, FT Ben Harrison, IN	COL E. M. Simms
Air Defense Artillery, Fort Bliss, TX	MG J. H. Little
Armor, Fort Knox, KY	MG T. C. Foley

Aviation, FT Rucker, AL  
 Aviation Logistics, FT Eustis, VA  
 Chaplain, FT Monmouth, NJ  
 Chemical, FT McClellan, AL  
 Engineer, FT Leonard Wood, MO  
 Field Artillery, FT Sill, OK  
 Finance, FT Ben Harrison  
 Infantry, FT Benning, GA  
 Intel Center and School, FT Huachuca, AZ  
 Intel School, FT Devens, MA  
 Military Police, FT McClellan, AL  
 Ord Msl & Munitions, Redstone Arsenal, AL  
 Ordnance, Aberdeen Proving Ground  
 Quartermaster, FT Lee  
 Signal, FT Gordon, GA  
 Special Warfare, FT Bragg, NC  
 Transportation, FT Eustis, VA

MG J. D. Robinson  
 MG J. D. Robinson  
 CH(COL) B.L. Windmiller  
 BG R. D. Orton  
 MG D. W. Christman  
 MG F. F. Party  
 COL J. D. Heard  
 MG J. A. White  
 MG P. E. Menoher, Jr.  
 MG P. E. Menoher, Jr.  
 MG C. A. Hines  
 COL W. W. Stirling  
 MG J. E. Wilson  
 BG J. J. Casick  
 MG R. E. Gray  
 MG D. J. Baratto  
 MG K. R. Wykle

#### TRADOC Specialist Schools

School of Music, Norfolk, VA  
 School of the Americas, FT Benning, GA

MAJ T. R. Davis  
 COL J.R. Feliciano

#### ROTC Cadet Command/Region

HQ ROTC Cadet Command  
 First ROTC Region, Ft Bragg, NC  
 Second ROTC Region, Ft Knox, KY  
 Third ROTC Region, Ft Riley, KS  
 Fourth ROTC Region, Ft Lewis, WA

MG W. C. Arnold  
 BG J. F. Johnson  
 BG J. N. Frazer III  
 COL J. C. Parris  
 COL R. E. Wolf (Acting)

#### TRADOC Special Activities

Joint Readiness Training Center,  
 Little Rock, AR  
 Training Support Center, FT Eustis, VA  
 United States Disciplinary Barracks,  
 FT Leavenworth, KS

COL G.A. Fisher  
 COL E. G. Broderick  
 COL W. L. Hart

Source: Adjutant General, HQ TRADOC.

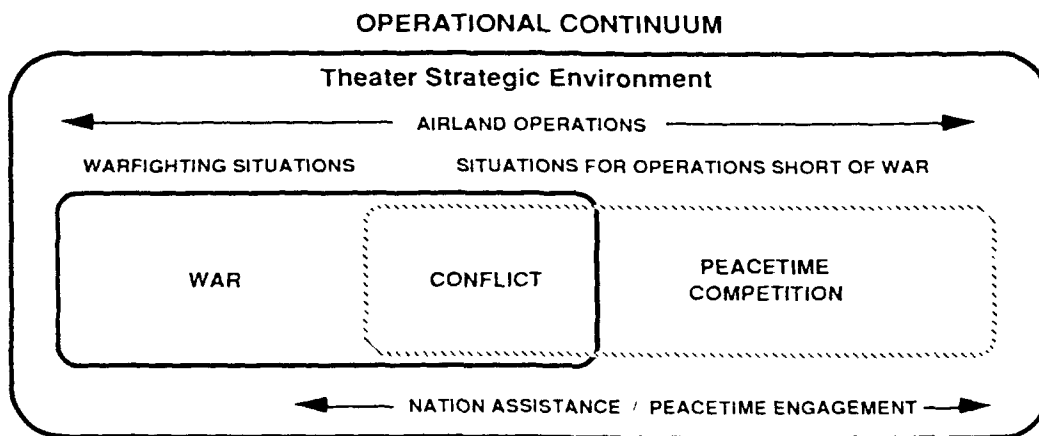
# Appendix D: TRADOC Internal Control Review Material Weakness Reported in 1991

FY	UNIQUE ID	SHORT TITLE	DATE CORRECT	TRADOC ID	DA ID	CORRECT	REMARKS
91	BENHARR 91-001	Maint and Inspect of Facilities DIS				No	
91	BENHARR 91-002	As built Drawings DIS				No	
91	BENHARR 91-003	Gas Distribution System DIS		TRADOC 91-002		No	
91	BENHARR 91-004	Electrical Distribution DIS				No	
91	BENHARR 91-005	Security Fence DIS				No	
91	Bliss 91-001	Loss of Government Resources	Aug 91	TRADOC 91-001		Yes	
91	Bliss 91-002	Improper Implementation of IMCP				No	
91	Bliss 91-003	Lack of Security at Furniture Warehouse				No	
91	Dix Doc 91-03	Price Negotiation Memoranda (PRM)				No	
91	Rucker 91-001	Reclassification of Hatch Road				Yes	DCST
91	OMMCS 91-1	Improvements Procedures	Mar 91			Yes	
91	OMMCS 91-2	Outprocessing Procedures	Mar 91			Yes	
91	OMMCS 91-3	Management of TDY Funds				No	
91	OMMCS 91-4	Inadequate Safeguard of Transmitted IG				No	
91	OMMCS 91-5	Power Converters				No	DCST
91	OMMCS 91-6	Loss of Property		TRADOC 91-003		No	
91	McClellan 91-001	Pricing for the Installation IMWRF	Jul 91	TRADOC 91-004		Yes	
91	McClellan 91-002	Purchase of Electricity and Natural Gas		TRADOC 91-005		No	
91	McClellan 91-003	Utilization of Dining Facilities		TRADOC 91-006		Yes	
91	Eustis 91-001	Barracks Space Management		TRADOC 91-007		No	
91	Eustis 91-002	Statements of Nonavailability (SNA)		TRADOC 91-007		No	
91	Eustis 91-003	Usage Reporting	Aug 91	TRADOC 91-007		Yes	
91	Gordon 91-001	Overobligation of Funds				No	
91	Gordon 91-002	Compl w/Fed, State & Local Envir Regs		TRADOC 91-009		No	SJA
91	Gordon 91-003	Direct Deliveries by Vendors	Jul 91	TRADOC 91-008		Yes	
91	Gordon 91-004	Impact of Personnel Turnovers on IC				No	
91	Jackson 91-01	Shortfalls in compliance with AR 200-1		TRADOC 91-009		No	
91	Jackson 91-02	NEPA compliance reviews		TRADOC 91-009		No	SJA
91	Knox 91-001	Inadequate Accountability Controls				No	
91	Huachuca 91-01	Backlogged Maint & Repair Reports	Oct 90			Yes	
91	Huachuca 91-02	Mgt of Refrigerators & Ranges				No	
91	Huachuca 91-03	Compliance Order from Arizona		TRADOC 91-009		No	SJA
91	Huachuca 91-04	Quotes on Small Purchases				Yes	

Source: Memo ATRM-MS, DCSRM, to TRADOC staff, n.d. (Sep 91, subj: Proposed Material Weakness for TRADOC Annual Assurance Statement on Internal Management Controls.

## Appendix E

### OPERATIONAL CONTINUUM

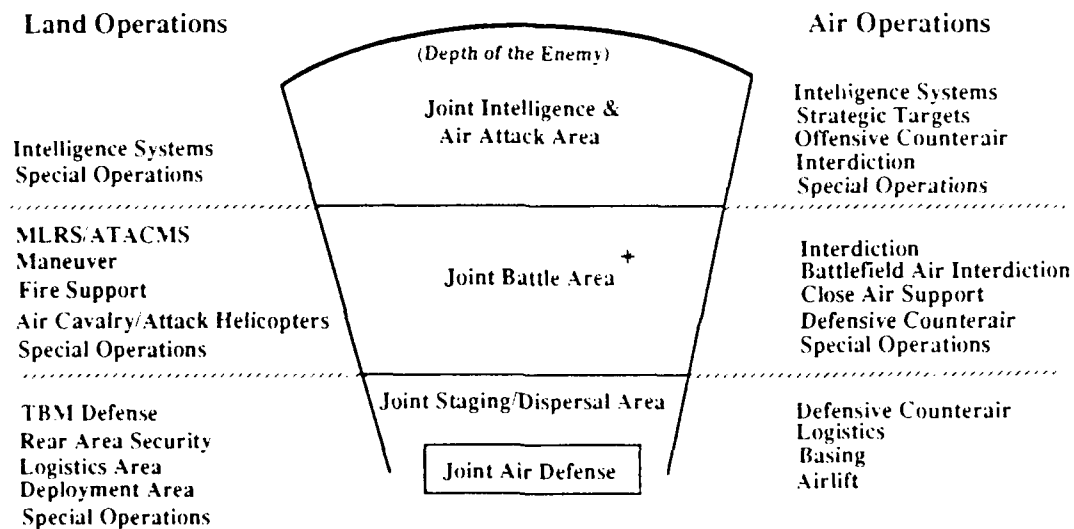


Source: TRADOC Pam 525-5, AirLand Operations, 1 Aug 91, p.8.



## Appendix F

### THEATER CAMPAIGN PLAN - AIRLAND OPERATIONS

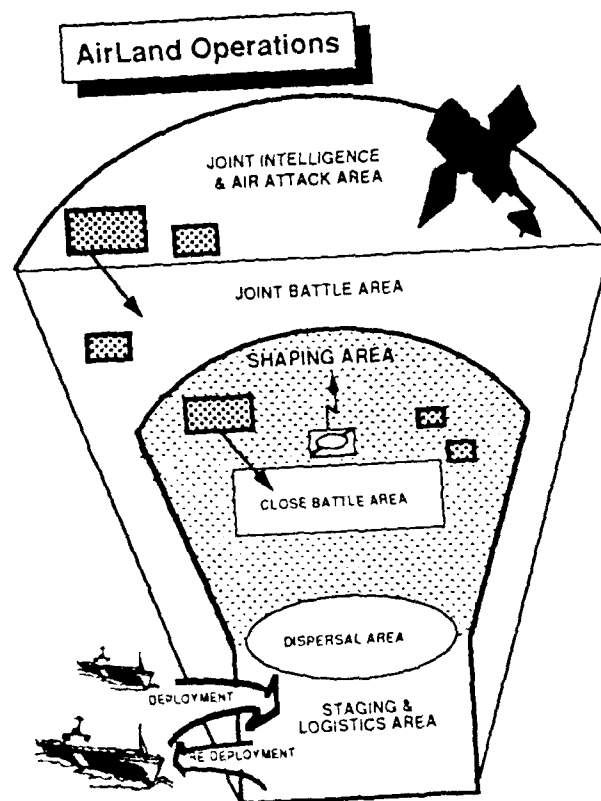


\* The joint battle area is where Army forces fight to the depth of all their weapon systems and where Army and Air Force capabilities overlap. Here we must emphasize the development of joint tactics, techniques, and procedures.

Source TRADOC Pam 525-5, Airland Operations, 1 Aug 91, p 11

## Appendix G

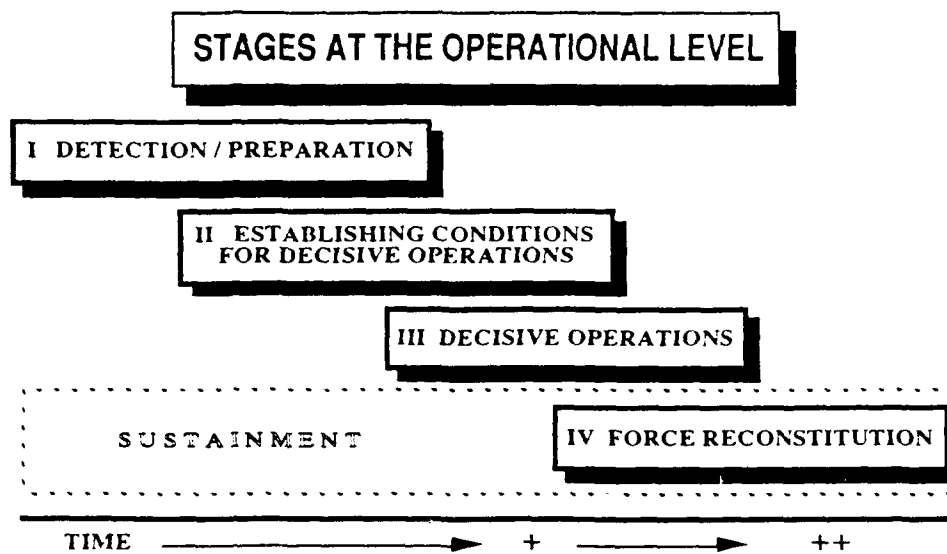
### THE EXTENDED BATTLEFIELD



Source: TRADOC Pam 525-5, AirLand Operations, 1 Aug 91, p. 15.

## Appendix H

### STAGES AT THE OPERATIONAL LEVEL



Source: TRADOC Pam 525-5, AirLand Operations, 1 Aug 91, p. 16.

Appendix I  
FIELD MANUALS PUBLISHED IN 1991

FM 1-112	Attack Helicopter Battalion	21 Feb 91
FM 1-114	TTP for the Regimental Aviation Squadron	20 Feb 91
FM 1-116	TTP for the Air Cavalry/Reconnaissance Troop	20 Feb 91
FM 1-514	Fundamentals of Rotor and Power Train Maintenance Tech and Procedures	5 Apr 91
FM 1-563	Fundamentals and Procedures of Airframe Maintenance	30 Sep 91
FM 5-446	Military Nonstandard Fixed Bridging	3 Jun 91
FM 6-20-20	TTP for Fire Support at Battalion Task Force and Below	27 Dec 91
FM 6-30	TTP for Observed Fire	16 Jul 91
FM 8-10	Health Service Support in a Theater of Operations	1 Mar 91
FM 8-10-3	Division Medical Operations Center	1 Mar 91
FM 8-10-5	Brigade and Division Surgeon's Handbook	10 Jun 91
FM 8-10-6	Medical Evaluation in a Theater of Operations Tactics, Techniques, and Procedures	31 Oct 91
FM 9-35	TMDE Maintenance Support and Unit Operations	12 Dec 91
FM 10-1	Quartermaster Principles	24 Sep 91
FM 10-23	Basic Doctrine for Army Field Feeding	12 Dec 91
FM 10-27-2	TTP for QM Direct Support Supply and Field Service Operations	18 Jun 91
FM 10-52-1	Water Supply Point Equipment and Operations	18 Jun 91
FM 10-500-1	Airdrop Support Operations in a Theater of Operations	19 Jun 91
FM 11-30	MSE Communications in the Corps/Division	27 Feb 91
FM 11-38	MSE System Management and Control	4 Apr 91
FM 11-41	Signal Support: Echelons Corps and Below (ECB)	18 Dec 91
FM 11-50	Combat Command within the Division (Heavy and Light)	4 Apr 91
FM 12-50	U.S. Army Bands	6 Sep 91
FM 17-95	Cavalry Operations	19 Sep 91
FM 22-9	Soldier Performance in Continuous Operations	12 Dec 91
FM 23-1	Bradley Fighting Vehicle Gunnery	1 Mar 91
FM 23-65	Browning Machine Gun, Caliber .50 HB, M2	19 Jun 91
FM 24-2	Spectrum Management	21 Aug 91
FM 24-17	Tactical Record Traffic System (TRTS)	17 Sep 91
FM 24-19	Radio Operator's Handbook	24 May 91
FM 25-50	Corps and Division Nuclear Training	30 Sep 91
FM 25-51	Battalion Task Force Nuclear Training	16 Jun 91
FM 27-14	Legal Guide for Soldiers	16 Apr 91
FM 27-100	Legal Operations	3 Sep 91

FM 34-2-1	TTP for Reconnaissance and Surveillance and Intelligence Support to Counterreconnaissance	19 Jun 91
FM 34-10-1	TTP for the REMBASS	18 Jun 91
FM 34-10-7	Quickfix Operations	30 Sep 91
FM 34-36	SOF I Electronic Warfare Operations	30 Sep 91
FM 34-37	EAC I Electronic Warfare Operations	15 Jan 91
FM 34-40-3	Tactical Signal Intelligence (SIGINT) Analysis Operations	21 May 91
FM 34-40-9	Direction Finding Operations	29 Aug 91
FM 34-40-12	Morse Code Intercept Operations	26 Aug 91
FM 34-40-13	Electronic Intelligence (ELINT) Operations	10 Sep 91
FM 43-11	Direct Support Maintenance Operations (Nondivisional)	5 Sep 91
FM 55-312	Military Convoy Operations in the Continental United States	3 Apr 91
FM 63-2	DISCOM, Armored, Infantry, and Mechanized Infantry Divisions	20 May 91
FM 90-13-1	Combined Arms Breaching Operations	28 Feb 91
FM 100-2-3	The Soviet Army: Troops, Organization, and Equipment	6 Jun 91
FM 100-25	Doctrine for Army SOF	12 Dec 91
FM(M) 3-100	NBC Defense, Chemical Warfare, Smoke, and Flame Operations	23 May 91
FM(M) 10-500-65	ADSE: Rigging 2-Litter Armored Ambulance (HMMWV)	16 Sep 91
FM(M) 20-11-2	Military Diving (Volume II)	1 Aug 91
FM(M) 24-40	Tactical Visual Information Doctrine	12 Dec 91
FM(M) 55-450-3	Multiservice Helicopter External Air Transport: Basic Operations and Equipment	11 Feb 91
FM(M) 55-450-4	Multiservice Helicopter External Air Transport: Single-Point Rigging Procedures	11 Feb 91
FM(M) 55-450-5	Multiservice Helicopter External Air Transport: Dual-Point Load Rigging Procedures	11 Feb 91
FM(M) 90-18	CSAR: Multi-Service Procedures for Combat Search and Rescue	31 May 91
FM(M) 90-21	JAAT-Multi-Service Procedures for Joint Air Attack Team Operations	16 Oct 91
FM(M) 90-22	Multi-Service Night and Adverse Weather Combat Operations	31 Jan 91
FM(M) 90-24	C <sub>3</sub> CM Multi-Service Procedures for C <sup>3</sup> CM	17 May 91

Source: Computer Printout, Army Wide Doctrinal and Training Literature Program Product Inventory by Index Sequence, HQ USATSC, 16 Apr 92.

Appendix J  
U.S. ARMY TRAINING CENTERS, ACTUAL INPUTS, FY 1991  
BASIC COMBAT TRAINING FISCAL YEAR 1991

US ARMY TRAINING CENTER	FIRST QUARTER		SECOND QUARTER		THIRD QUARTER		FOURTH QUARTER		TOTAL ACTIVE ARMY	TOTAL	REP*	TOTAL			
	ACTIVE ARMY	REP*	TOTAL	ACTIVE ARMY	REP*	TOTAL	ACTIVE ARMY	REP*							
TOTAL	14,874	5,480	20,354	9,709	6,844	16,553	7,335	12,126	19,461	14,390	10,114	24,504	46,308	34,564	80,872
DIX	2,041	978	3,019	1,309	946	2,255	633	1,866	2,499	449	858	1,307	4,432	4,648	9,080
JACKSON	6,844	2,250	9,094	4,172	2,543	6,714	3,379	4,989	8,368	6,949	5,093	12,042	21,343	14,875	36,218
L. WOOD	2,900	1,429	4,329	1,880	2,061	3,941	1,701	2,755	4,456	3,432	2,461	5,893	9,913	8,706	18,619
SILL	2,016	353	2,369	1,063	419	1,482	842	924	1,766	1,301	542	1,842	5,222	2,237	7,457
MCLELLAN	0	4	0	0	0	0	253	464	717	386	265	661	649	729	1,378
KNOX	1,173	470	1,543	1,286	875	2,161	417	846	1,263	1,209	707	1,916	3,985	2,798	6,883
LEWIS	0	0	0	0	0	0	0	0	0	654	189	843	654	189	843
HOOD	0	0	0	0	0	0	110	282	392	0	0	0	110	282	392

ONE STATION UNIT TRAINING FISCAL YEAR 1991

US ARMY TRAINING CENTER	FIRST QUARTER		SECOND QUARTER		THIRD QUARTER		FOURTH QUARTER		TOTAL ACTIVE ARMY	TOTAL	REP*	TOTAL			
	ACTIVE ARMY	REP*	TOTAL	ACTIVE ARMY	REP*	TOTAL	ACTIVE ARMY	REP*							
TOTAL	9,107	1,905	11,012	6,260	3,429	9,689	3,586	5,822	9,408	6,855	5,143	11,998	25,808	16,299	42,107
L. WOOD	1,523	393	1,916	541	523	1,064	201	873	1,074	130	932	1,062	2,395	2,721	5,116
SILL	1,595	366	1,961	606	400	1,006	281	874	1,155	615	701	1,316	2,751	2,507	5,438
MCLELLAN	1,038	287	1,325	817	645	1,462	198	640	838	851	941	1,792	2,904	2,513	5,417
KNOX	989	191	1,180	1,488	488	1,976	664	580	1,244	1,617	520	2,137	4,758	1,779	**6,537
BENNING	3,962	668	4,630	2,808	1,373	4,181	2,242	2,855	5,097	3,642	2,049	5,691	12,654	6,945	19,599

\* USAR AND NG

\*\* INCLUDES 1768 ROTC

Sources: SSBRS, ODCST, CY 90/I and 90/II, Annexes A, B, and C.

# ADVANCED INDIVIDUAL TRAINING FISCAL YEAR 1991

US ARMY TRAINING CENTER	FIRST QUARTER		SECOND QUARTER		THIRD QUARTER		FOURTH QUARTER		TOTAL ACTIVE ARMY	TOTAL REP*	TOTAL				
	ACTIVE ARMY	REP*	TOTAL	ACTIVE ARMY	REP*	TOTAL	ACTIVE ARMY	REP*							
TOTAL	6,881	3,425	10,306	4,976	2,137	7,113	2,602	3,662	6,264	4,059	5,025	9,084	18,518	14,249	32,767
DIX	737	430	1,167	371	187	558	148	473	621	143	521	664	1,399	1,611	3,010
JACKSON	2,429	1,153	3,582	1,708	690	2,398	805	1,015	1,900	1,202	1,686	2,888	6,144	4,624	10,768
L. WOOD	1,166	1,373	2,539	1,024	899	1,923	548	1,368	1,916	455	1,965	2,420	3,193	5,605	8,798
SILL	1,183	333	1,516	720	218	938	745	478	1,223	1,743	536	2,279	4,391	1,565	5,956
MCCLELLAN**	0	0	0	0	0	0	0	0	132	132	32	164	132	32	164
KNOX	371	53	424	298	66	364	169	123	292	109	100	209	947	342	1,289
BLISS	995	83	1,078	855	77	932	187	125	312	275	185	460	2,312	470	2,782

\* USAR AND NG

\*\* AIT INPUTS AT FT MCCLELLAN ARE INTO OSUT CLASSES.

Appendix K  
TRADOC SCHOOLS INPUT AND GRADUATES  
FISCAL YEAR 1991

SCHOOLS	INPUT <sup>a</sup>	GRADUATES
Adjutant General School	5,129	4,511
ALMC <sup>b</sup>	6,685	6,599
Air Defense School	4,186	2,844
Armor School	9,221	7,990
Aviation Logistics	2,216	1,804
Aviation School	8,598	6,524
Command and General Staff College	10,445	8,415
Chaplain School	1,121	1,043
Chemical School	2,559	1,700
Defense Information School	915	855
Def Language Institute, Monterey <sup>c</sup>	3,698	3,003
Drill Sergeant School - Ft Dix	1,008	736
Drill Sergeant School - Ft Jackson	327	250
Engineer School, Ft Leonard Wood	4,338	3,366
Field Artillery School	8,197	6,637
Finance School	2,259	2,186
Infantry School	36,379	29,602
Intelligence School, Devens	1,405	1,201
Intelligence School, Huachuca	3,440	3,031
JFKSWCS, Ft Bragg	9,554	6,556
Logistics Center, Fort Lee <sup>d</sup>	224	224
Military Police School	4,597	4,597
Missile and Munitions School	1,872	1,695
Ordnance School - APG	4,106	3,314
Ordnance School - Ft Belvoir	415	361
Polygraph Institute	243	241
Quartermaster School	7,243	6,099
Recruitment and Retention School	3,382	2,884
School of Cadet Command, Ft Monroe	668	659
School Military Packing Techniques <sup>e</sup>	641	545
Sgt Major Academy	3,277	2,898
Signal School	7,859	6,179
Soldier Physical Fitness School	2,312	2,154
Staff Training Center, Ft Monroe	299	298
Training Center - Ft Dix	945	843
Training Center - Ft Jackson	338	331
Training Center - Ft Leonard Wood	890	847
Training Center - Ft McClellan <sup>f</sup>	130	93
Transportation - Ft Eustis	2,600	2,074
Transportation - Ft Story	97	81
TOTALS	163,818	135,270

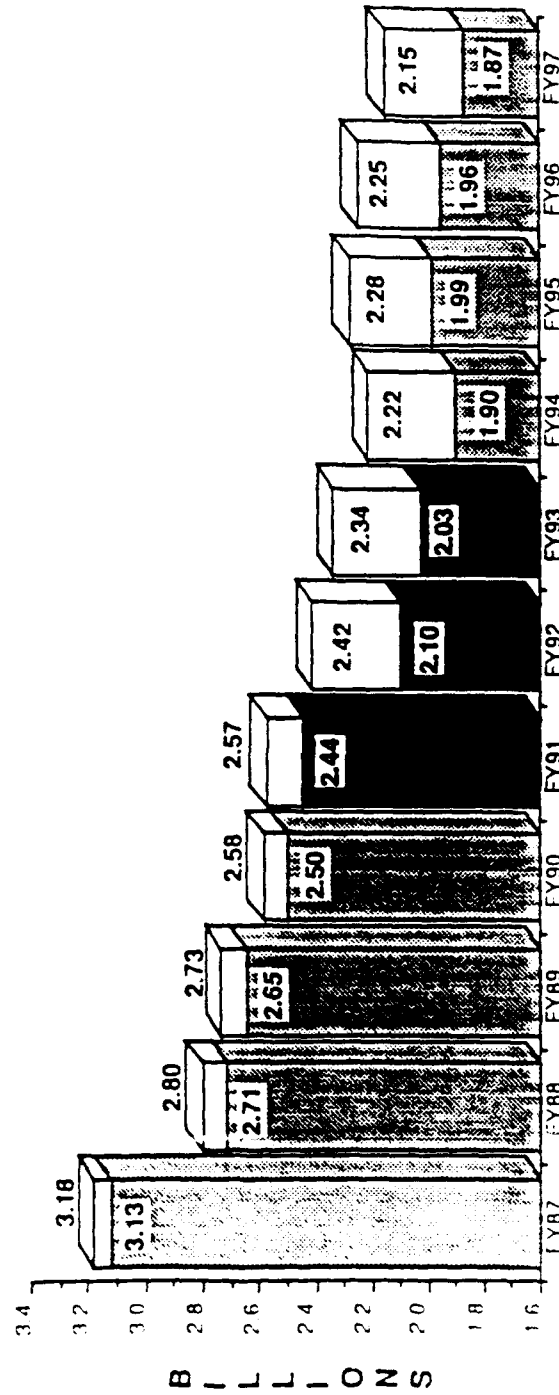


- <sup>a</sup> Does not include IET
- <sup>b</sup> ALMC did not transfer to TRADOC until 1 Oct 91.
- <sup>c</sup> Information from scheduling branch, DLI. Input figure does not include foreign military students, non-DOD civilians, family members, or those enrolled in the Foreign Area Officer Orientation course.
- <sup>d</sup> Logistics Center held only 1 class, Apr 1991.
- <sup>e</sup> School Military Packing Techniques did not transfer to TRADOC until Oct 1991.
- <sup>f</sup> Training Center - Fort McClellan held no skill level 2 or above classes in the 1st, 2d, or 3rd quarters, FY 1991. Skill level 2 begins with AIT.

Source: SSHRs, ODCST, Tng Ops and Mgmt Act, CY 91/I, Annex D; CY 91/II, Annex D.

# RESOURCE DATA, CY 1991

Chart I: TRADOC Operations and Maintenance, Army (OMA)  
Funding Trends and Projections, 1987-1997



FY 92 Constant Dollars as of 31 Dec 91

Source: Briefing Chart, ODCSRM, TRADOC  
Chief of Staff Conference, 26 Feb 92

TABLE I: RESOURCE DATA, CY 1991  
TRADOC Command Strength, CY 1991

	<u>OFFICER</u>		<u>WARRANT OFFICER</u>		<u>ENLISTED</u>		<u>AGGREGATE MILITARY</u>		<u>CIVILIAN</u>	
	<u>AUTH</u>	<u>ASGD</u>	<u>AUTH</u>	<u>ASGD</u>	<u>AUTH</u>	<u>ASGD</u>	<u>AUTH</u>	<u>ASGD</u>	<u>AUTH</u>	<u>ASGD</u>
FORT BEN HARRISON	224	237	9	15	862	806	1095	1028	929	759
FORT BENNING	746	604	22	23	4740	4672	5508	5299	3228	3364
FORT BLISS	278	289	59	73	1999	2594	2336	3056	2548	2471
CARLISLE BARRACKS	9	10	0	0	43	56	52	66	239	242
FORT DIX	155	169	8	8	1766	2201	1929	2378	1579	1425
FORT EUSTIS <sup>a</sup>	256	249	93	104	1520	1654	1859	2047	1800	-- <sup>d</sup>
FORT GORDON	315	279	26	34	2636	2948	2977	3310	1793	1663
FORT HUACHUCA	302	3	48	0	1277	0	1637	0	1117	1050
FORT JACKSON	247	230	11	11	2320	2341	2578	2582	1312	1339
FORT KNOX	941	405	22	29	5114	4721	6082	5155	2987	3067
FORT LEAVENWORTH	1592	1066	17	10	2123	1027	3722	2023	1846	1514
FORT LEE <sup>a</sup>	385	314	27	31	1149	1229	1561	1576	1657	1789
FORT LEONARD WOOD	425	380	22	24	3161	2629	3608	3023	1455	1380
FORT MCCLELLAN	131	111	14	23	1362	1743	1709	2077	882	893
FORT MONROE <sup>b</sup>	569	449	5	9	273	279	551	736	1716	1425 <sup>c</sup>
FORT RUCKER	509	424	635	540	1633	1571	2677	2538	2309	2203
FORT SILL <sup>a</sup>	463	558	43	51	2571	2590	3076	4199	2009	2353
NON-TRADOC INSTALLATIONS	1794	2242	94	153	4910	5192	5789	10587	2827	1022
TOTALS	9521	9124	1147	1143	39367	42423	50635	51690	32233	32002

SOURCE: TRADOC STRENGTH DATA FROM ODCSBS, AG, AND ODCSRM, FORCE MGT DIV, OPS BR

<sup>a</sup> INSTALLATION TOTALS INCLUDE SUBINSTALLATION STRENGTH

<sup>b</sup> INCLUDES HQ TRADOC - STRENGTH

<sup>c</sup> INCLUDES FORT EUSTIS

<sup>d</sup> REPORTING CONSOLIDATED WITH FORT MONROE

# RESOURCE DATA CY 1991

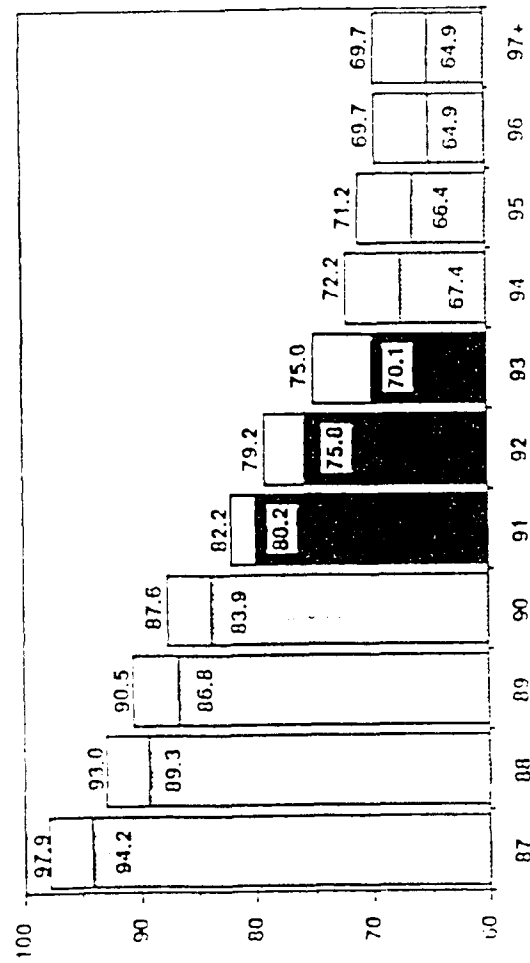
## TABLE II. TRADOC Requirements and Allocations

	<u>OFFICER</u>	<u>WARRANT OFFICER</u>	<u>ENLISTED</u>	<u>CIVILIAN</u>	<u>TOTAL</u>
<u>Combat Developments</u> (includes Test & Evaluation)	1947/1361	105/63	884/686	3687/1862	6623/3972
<u>Training Developments</u>	894/804	155/109	2221/2148	3333/2812	6603/4873
<u>Individual Training</u>					
<u>Army Training Centers</u>	817/726	21/13	8369/8194	825/546	10032/9479
<u>Army Service Schools</u>	2551/2349	823/766	12733/12517	5508/4276	21615/19908
<u>ROTC</u>	1667/1500	0/0	1427/1347	867/588	3961/3435
<u>Training Support</u>	1092/927	216/131	7073/7013	3838/2809	12219/10880
<u>Support Operations</u>	1401/1225	111/96	7192/6406	21192/13691	29896/21418
<u>Command Summary</u>	10387/8906	1431/1178	40012/38409	47309/30623	99139/791163

SOURCE: SHHR, ODCSRY, CY 91/92

# RESOURCE DATA, CY 1991

Table III: TRADOC Manpower Trends and Projections 1987-1997



DEPUTY COMMANDING GENERALS/

CHIEFS OF STAFF

AND

DEPUTY CHIEFS OF STAFF

IN HEADQUARTERS TRADOC

CY 1991



MAJOR GENERAL JAMES W. VAN LOBEN SELS  
DEPUTY COMMANDING GENERAL/CHIEF OF STAFF  
UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND  
28 July 1989 - 13 September 1991



MAJOR GENERAL DONALD M. LIONETTI  
DEPUTY COMMANDING GENERAL/CHIEF OF STAFF  
UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND  
12 November 1991 -





Major General Craig A. Hagen  
Deputy Chief of Staff for Training,  
16 December 1989 - 13 September 1991  
Interim Deputy Commanding General/Chief of Staff,  
16 September - 16 October 1991



Major General Henry M. Hagwood, Jr.  
Deputy Chief of Staff for Resource Management,  
11 September 1989 -  
Interim Deputy Commanding General/Chief of Staff,  
17 October 1991 - 8 November 1991



Major General Dennis P. Malcor  
Deputy Chief of Staff for Training  
14 September 1991 -



Major General Steven Silvasy, Jr.  
Deputy Chief of Staff for Concepts, Doctrine,  
and Developments  
6 August 1990 - 1 October 1991



Major General Wesley K. Clark  
Deputy Chief of Staff for Concepts, Doctrine,  
and Developments,  
2 October 1991 -



Brigadier General Robert L. Dilworth  
Deputy Chief of Staff for Base Operations Support,  
6 August 1990 - 16 June 1991



Brigadier General Paul Y. Chinen  
Deputy Chief of Staff for Base Operations Support,  
16 June 1991 -



Colonel David Fitz-Enz  
Deputy Chief of Staff for Information Management,  
15 February 1990 -

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### Introduction

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2. MFR ATMH, OCH, John L. Romjue, 9 Oct 91, subj: Gen Franks' Remarks to TRADOC Staff, 7 Oct 91.
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36. Briefing Chart CSO-1A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Military Injury Rate (data as of 31 Dec 91).
37. Briefing Chart CSO-1B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Installation Military Injury Rate (data as of 31 Dec 91).
38. Briefing Chart CSO-1C, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Military Injuries - On Duty (data as of 31 Dec 91).
39. Briefing Chart CSO-1D, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Military Injuries -- Off Duty (data as of 31 Dec 91).
40. Briefing Chart CSO-2A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Army Motor Vehicle Accident Rates (data as of 31 Dec 91).

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42. Briefing Chart CSO-4, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Aviation Accident Comparison Class A-C (data as of 31 Dec 91).
43. Briefing Chart CSO-3A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Lost Time FECA Claim Rates (data as of 31 Dec 91).
44. Briefing Chart CSO-3B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: Installation Lost Time FECA Claim Rates (data as of 31 Dec 91).
45. Briefing Chart CSO-5A, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Fatal Accidents (data as of 31 Dec 91).
46. Briefing Chart CSO-5B, HQ TRADOC Review and Analysis, First Quarter FY 92, 21 Feb 92, subj: TRADOC Fatal Accidents - By Type (data as of Dec 91).
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52. Briefing Chart, ODCSBOS Community and Family Activity Directorate, TRADOC Chiefs of Staff Conference, 26 Feb 92, subj: Child Development Centers, Capability as a Percentage of Demand.
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# LIST OF ACRONYMS AND ABBREVIATIONS

AAA	Army Audit Agency
AAR	after action review
AAWS-H	Advanced Antitank Weapons System - Heavy
AAWS-M	Advanced Antitank Weapons System - Medium
ABCA	America-Britain-Canada-Australia
ACCP	Army Correspondence Course Program
ACRA	Airlift Concepts and Requirements Agency
ACS	Army Community Service
ACTEDS	Army Civilian Training, Education, and Development
ADC <sup>3</sup> I	Air Defense Command Control Communications and Intelligence
ADDS	Army Data Distribution System
ADP	automatic data processing
ADTLP	Armywide Doctrine and Training Literature Program
AFV	Armored Family of Vehicles
AGBD	air base ground defense
AGES/AD	Air Ground Engagement System/Air Defense
AGR	Active Guard/Reserve
AHIP	Army Helicopter Improvement Program
AIMS	Automated Information Management System
AIMS	Automated Instructional Management System
AIP	Army Helicopter Improvement Program
AIPD	Army Institute for Professional Development
AIRNET	air networking
AIT	Advanced Individual Training
ALB-F	AirLand Battle-Future
ALFA	Air Land Forces Application Agency
ALMC	Army Logistics Management College
ALO	authorized level of organization
ALRTP	Army Long Range Training Plan
AMC	U.S. Army Materiel Command
AMM	Army modernization memorandum
AMOPES	Army Mobilization and Operations Planning, Execution System
AMOPS	Army Mobilization and Operations Planning System
AMSC	Army Management Staff College
ANCOG	Advanced Noncommissioned Officer Training
AOE	Army of Excellence
AP	allied publications
AR	Army regulation
ARCENT	Army Forces, U.S. Central Command
ARNG	Army National Guard
ARPRINT	Army Program for Individual Training
ARSTAF	Army Staff
ARTBASS	Army Training Battle Automated Simulation Systems
ARTEP	Army Training and Evaluation Program

ASAT	Automated Systems Approach to Training
ASM	Armored Systems Modernization
ATACMS	Army Tactical Missile System
ATP	Allied Tactical Publication
ATRRS	Army Training Requirements and Resource System
ATSC	U.S. Army Training Support Center
AVCATT	Aviation Combined Arms Tactical Trainer
AWACS	Airborne Warning and Control System
BASOPS	Base Operations
BBS	battalion-brigade battle simulation
BCT	basic combat training
BCTP	Battle Command Training Program
BCT/OSUT	Basic Combat Training/One Station Unit Training
BDO	battle dress overgarment
BDP	Battlefield Development Plan
BFV	Bradley Fighting Vehicle
BFVS	Bradley Fighting Vehicle System
BNCOC	Basic Noncommissioned Officer Training
BOIP	basis of issue plan
BOS	Battlefield Operating Systems
BRAC	Base Realignment and Closure
C3I	command, control, communications, and intelligence
C <sup>4</sup>	command, control, communications, and computers
CAC	U.S. Army Combined Arms Center and Fort Leavenworth
CAC-T	Combined Arms Command - Training
CAL	Center for Army Leadership
CALL	Center for Army Lessons Learned
CAS	close air support
CAS <sup>3</sup>	Combined Arms and Services Staff School
CASCOM	Combined Arms Support Command
CATA	Combined Arms Training Activity (after 1 Oct 90,
CATIES	Combined Arms Team Integrated Evaluation System
*CATS	Combined Arms Training Strategy
CATT	Combined Arms Tactical Trainer
CBRS	Concept Based Requirements System
CBS	Corps Battle Simulation
CCTT	Close Combat Tactical Trainer
CECOM	U.S. Army Communications and Electronics Command
CENTCOM	U.S. Central Command
CEP	Concept Evaluation Program
CFE	Conventional Forces in Europe
CFV	cavalry fighting vehicle (Bradley)
CGSC	Command and General Staff College
CIA	computer assisted instruction
CINC	commander(s)-in-chief
CIPPS	Civilian Integration into the Personnel Proponent System
CLIC	Army - Air Force Center for Low Intensity Conflict

CLT	Common Leader Training
CMTC	Combat Maneuver Training Center
CNR	Combat Net Raddio
COIC	critical operational issues and criteria
CONOPS	contingency operations
CONUS	Continental United States
CPO	Civilian Personnel Office
CRC	CONUS Replacement Center
CSA	Chief of Staff of the Army
CSS	combat service support
CSSTSS	Combat Service Support Training Simulation System
CTC	Combat Training Centers
CTIES	Collective Training Instrumentation and Engagement System
CTT	Common Task Test
DARPA	Defense Advanced Research Projects Agency
DCS	deputy chief of staff
DCSA	Deputy Chief of Staff for Analysis
DCSBOS	Deputy Chief of Staff for Base Operations Support
DCSCDD	Deputy Chief of Staff for Concepts, Doctrine and Development
DCSIM	Deputy Chief of Staff for Information Management
DCSRM	Deputy Chief of Staff for Resource Management
DCST	Deputy Chief of Staff for Training
DEA	Drug Enforcement Agency
DIS	directorates for installation support
DLIFLC	Defense Language Institute Foreign Language Center
DRAG	Doctrinal Review and Approval Group
DRC	Dynamics Research Corp.
DSS	Decision Support System
DSS	drill sergeants' schools
DTO	Distributed Training Office
DTP	Distributed Training Program
DTS	Distributed Training Strategy
EAC	echelons above corps
EPMS	Enlisted Personnel Management System
ET	embedded training
ETS	European troop strength
FAA	Federal Aviation Agency
FAA	Functional Area Analysis
FAADS	Forward Area Air Defense System
FAMSIM	family of simulators
FASCO	forward area support coordination office
FDTE	Force Development Test and Experimentation Program
FLTCE	Foreign Language Training Center--Europe
FM	field manual
FORSCOM	U.S. Army Forces Command
FTU	fitness training unit

FTX	field training exercise
GPS	global positioning system
GSM	ground station module
HEMTT	Heavy Expanded Mobility Tactical Truck
HET	heavy equipment transporters
HHC	headquarters and headquarters company
HIP	Howitzer Improvement Program
HMMWV	High Mobility Multipurpose Wheeled Vehicle
IDF	Israeli Defense Forces
IET	initial entry training
IFF	identification friend or foe
IMA	individual mobilization augmentee
IMET	International Military Education and Training
IMS	international military student
INF	Intermediate Nuclear Force (Treaty)
INSCOM	U.S. Army Intelligence and Security Command
IRR	Individual Ready Reserves
ISM	installation support module
ISYSCON	Integrated System Control
ITEP	Individual Training Evaluation Program
ITV	improved TOW vehicles
JAAT	joint air attack team
JCS	Joint Chiefs of Staff
JRTC	Joint Readiness Training Center
JSAT	Joint Systems Approach to Training
JTTP	joint tactics, techniques, and procedures
J-STARS	Joint Surveillance and Target Acquisition Radar System
LADP	Leader Assessment Development Program
LATAM	Latin America
LDAP	Leader Development Action Plan
LDDN	Leader Development Decision Network
LH	Light Helicopter
LIC	low intensity conflict
LID	light infantry division
LOGEX	logistics exercises
LOSAT	Line-of-Sight Antitank
LRAMRP	Long Range Army Materiel Requirements Plan
LRRDAP	Long Range Research Development and Acquisition Plan
LRSU	long range surveillance units
LUH	Light Utility Helicopter
MAA	Mission Area Analysis
MAC	U.S. Air Force Military Airlift Command
MACOM	major Army command
MAIS	Mobile Automated Instrumentation Suite

MANPRINT	Manpower and Personnel Integration Program
MAS	Military Agency for Standardization
MATC	Mobilization Army Training Center
MCCDC	Marine Corps Combat Development Command
MCS	Maneuver Control System
MDSS	Mobilization Decision Support System
MILES	Multiple Integrated Laser Engagement System
MLRS	Multiple Launch Rocket System
MOB	mobilization
MOBEX	mobilization exercise
MOS	military occupational specialty
MOUT	military operations on urban terrain
MPRI	Military Professional Resources, Inc.
MQS	Military Qualification Standards
MSCS	Multi-Service Communications Systems
MSE	Mobile Subscriber Equipment
MUSARC	Major U.S. Army Reserve Command
MWOTC	Master Warrant Officer Training Course
NAAG	NATO Army Armaments Group
NATO	North Atlantic Treaty Organization
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCO	noncommissioned officer
NCOA	noncommissioned officer academy
NCOES	Noncommissioned Officer Education System
NGB	National Guard Bureau
NSA	National Security Council
NSC	National Simulation Center (Ft. Leavenworth)
NTC	National Training Center
NWTC	Northern Warfare Training Center
NYAC	New York Area Command
OBC	Officer Basic Course
OC	observer - controller
OCAR	Office, Chief of Army Reserve
OCIE	organizational clothing and individual equipment
OLE	Organizational Leadership for Executives
OPFOR	opposing forces
OPTEC	U.S. Army Operational Test and Evaluation Command
OPTEMPO	operating tempo
OSUT	One station unit training
OSV	OPFOR Surrogate Vehicle
PAC	personnel administration center
PACOM	U.S. Army Pacific Command
PARR	Program Analysis Resource Review
PCC	Precommand Course
PERSCOM	U.S. Total Army Personnel Command
PGTS	Precision Gunnery Training System
PLDC	Primary Leadership Development Course
PM TRADE	Program Manager for Training Devices

PME	Personnel Management for Executives
POI	Program of Instruction
POM	Program Objective Memorandum
POR	processing for overseas replacement
PRIME	Precision Range Integrated Manuever Exercise
PROFS	Professional Office System
RAM	reliability, availability, and maintainability
RC	Reserve Components
RCAS	Reserve Component Automation System
RCTI	reserve component training institutions
RC-CAS <sup>3</sup>	Reserve Component Combined Arms and Services Staff School
RC-NCOES	Reserve Component Noncommissioned Officer Education System
RC-OAC	Reserve Component Officer Advanced Course
RC-OES	Reserve Component Officer Education System
RC-TDAP	Reserve Component Training Development Action Plan
RDMS	Range Data Measurement Subsystem
RFP	request for proposal
RIF	reduction in force
RISTA	reconnaissance, intelligence, surveillance, and target acquisition
RMCS	Range Monitoring and Control Subsystem
ROC	Required Operational Capability
ROTC-CC	Reserve Officers Training Corps -- Cadet Command
SAIC	Science Applications International Corporation
SAMS	School of Advanced Military Studies
SAT	Systems Approach to Training
SATFA	Security Assistance Training Field Activity
SATS	Standard Army Training System
SAWE	Simulated Area Weapons Effects
SAWE-RF	simulated area weapons effects - radio frequency
SAWE-RF	simulated area weapons effects--radio frequency
SBIS	sustaining base information systems
SDI	Strategic Defense Initiative
SDT	Self Development Test
SHAPE	Supreme Headquarters Allied Powers Europe
SI	Special Text
SIMNET	Large Scale Simulation Network
SINCGARS	Single Channel Ground Airborne Radio System
SMDR	Structure Manning Decision Review
SME	subject matter expert
SMECS	Spectrum Monitoring Engineering and Control System
SOA	School of the Americas
SOCOM	U.S. Special Operations Command
SOF	Special Operations Forces
SOUTHCOM	U.S. Army Southern Command
SOUTHCOM	U.S. Southern Command
SQT	Skill Qualification Test
SSC	U.S. Army Soldier Support Center

STANAG	standardization agreements
STANO	surveillance, target acquisition, and night observation
STARC	State Area Command
START	Strategic Arms Reduction Treaty
SWA	Southwest Asia
SWCS	Special Warfare Center and School
SWOTC	Senior Warrant Officer Training Course
TABS	Total Army Basing Study
TAC	U.S. Air Force Tactical Air Command
TADSS	training aids, devices, simulators, and simulations
TAFT	Technical Assistance Field Team
TAIMS	TRADOC Automated Instructional Management System
TAP	The Army Plan
TASOSC	theater army special operations support command
TC	training circular
TC ACCIS	Transportation Coordinator Command and Control
TCCS	Tactical Communications and Control System
TCDC	Tactical Commander's Development Course
TDA	table of distribution and allowances
TDWMS	Training Development Workload Management System
TEAL	tactics, equipment, and logistics
TEAM-UP	training enhancement and mobilization upgrade
TES	tactical engagement simulation
THP	take home package
TLRP	TRADOC Long Range Plan
TMOPES	TRADOC Mobilization and Operations Planning Execution System
TMOPS	TRADOC Mobilization and Operations Planning System
TOE	table of organization and equipment
TOMA	Training Operations and Management Directorate
TOW	tube launched, optically tracked, wire guided
TQM	total quality management
TRAC	TRADOC Analysis Command
TRAMEA	TRADOC Management Engineering Activity
TRAMOD	training module
TSIP	TOW sight improvement Program
TSM	TRADOC System Manager
TTP	tactics, techniques, and procedures
TWGSS	Tank Weapons Gunnery Simulation System
TWV	Tactical Wheeled Vehicle
UAV	unmanned aerial vehicle
UMT	unit ministry team
USAISC	U.S. Army Information Systems Command
USAR	U.S. Army Reserve
USAREUR	U.S. Army Europe
USARF	U.S. Army Reserve Forces (Schools)
USARI	U.S. Army Russian Institute
USASMA	U.S. Army Sergeants Major Academy



USASOC U.S. Army Special Operations Command  
USCENTCOM U.S. Central Command  
UTARS Utility Aircraft Requirement Study  
U.A.E. United Arab Emirates  
  
VTC video teleconferencing  
  
WARSIM warfighting simulation  
WESTCOM U.S. Army Western Command  
WOLDAP Warrant Officer Leader Development Action Plan  
WOTS Warrant Officer Training System

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